

**Regenerative playscapes**

## Declaration

I, Tinashe Dyirakumunda [0612234v] am a student registered for the course Master of Architecture [Professional] in the year 2010. I hereby declare the following:

I am aware that plagiarism [the use of someone else's work without permission and/or without acknowledging the original sources] is wrong. I confirm that the work submitted for assessment for the above course is my own unaided work except where I have stated explicitly otherwise. I have followed the required conventions in referencing thoughts, ideas, and visual materials of others. For this purpose, I have referred to the Graduate School of Engineering and the Built Environment style guide. I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my unaided work or that I have failed to acknowledge the source of the ideas or words in my own work.

This document is submitted in partial fulfilment for the degree:

Master of Architecture [Professional] , at the University of the Witwatersrand, Johannesburg, South Africa, in the year 2010



In memory of Mom

Doreen Dyirakumunda

## Acknowledgements

I would like to thank:

My family for the many years of support. Mom and Dad for the love and patience. Farayi, Nyasha, Chengetanayi. I love you guys.

My wife Nzwisisai for her encouragement and unconditional love.

My extended family in South Africa. Glen, Tinyiko, Ikeletse. You made it easy for me to shine.

My friends who have always been down since day one.

My lectures and teachers who have moulded my educational career.

My thesis tutor Gerald Chungu for guidance, wisdom & patience.

# Contents

01 Introduction	[06]	05 Site	[59]
Abstract	[07]		
Proposition	[08]	06 Programmatic Resolution	[69]
Motivation & Approach	[10]	Proposal	[70]
		Programmatic Resolution	[72]
02 Childhood Growth & Development	[12]	Schedule of Areas	[74]
Theories of Childhood Growth & Development	[13]		
Playing and learning	[15]	07 Design Development	[75]
Conclusion	[20]		
		08 Bibliography	[91]
03 Children in the urban environment	[21]		
Children in cities	[22]		
Inner City Johannesburg	[31]		
Conclusion	[49]		
04 Precedents	[51]		



## 01. Introduction

## Abstract

Child's play. Both creative and destructive creativity. Yet through this activity of creative self expression, freedom of exploration and enquiry that it allows, an assimilation of knowledge follows. Traditional formal and informal learning takes place in the tranquil environment of the preschool and non-structured open spaces respectively within an ideally self regulating broader public forum.

With both the natural and built environment constantly interacting with social circumstance to enable and facilitate play and by extension learning. The context of the Johannesburg inner city landscape, a traditionally considered hostile environment for these activities, is being interrogated as one that can offer both informal but more importantly formal opportunities.

This densely built up urban landscape is geared for economic activity and houses an increasingly urban population from the lower tiers of the economic spectrum inevitably resulting in congestion, which places an additional strain on health care, education and other social structures. Compounded to an urban scenario where there are already existing hazards such as traffic and safety plus tight spatial constraints, such forces do not act collectively to create a child friendly educative conducive environment.

The importance of education cannot be over emphasised in the struggle to alleviate poverty and it starts with structured early childhood development programmes. Architecture becomes part of the solution through the creation of necessary positive spaces. This thesis aims to better understand how play as a mechanism for learning for young children can be used to develop an architectural response for formal spaces that enhance early childhood development in the inner city of Johannesburg.

## Introduction

*“Man only plays when he is human in the full sense of the word, and he is only completely human when he is playing.”* Friedrich Schiller

Growing up on small holding in peri-urban Harare Zimbabwe, **play** was an integral part of my way of life during the early years and it was punctuated by both constructive and destructive creativity! Through this activity of creative self expression, freedom of exploration and enquiry that it allowed facilitated for knowledge assimilation in an informal environment. Formal learning in a more structured environment of the preschool worked in conjunction with the informal learning which took place in the non structured open spaces of **play** at home.

With both the natural and built environment being enablers and facilitators of play and by extension learning, this has led me to interrogate how the environment of the inner city of Johannesburg with its inherent contradictions of among others being both a place primarily of economic activity and now a place of residence, its dense fabric and lack of abundant open spaces can be an enabler and facilitator of **play** and learning for young children.

This thesis aims to propose how to enhance playing and learning to improve early childhood development in the inner city of Johannesburg, a traditionally considered hostile environment for these activities. This will be done through **regenerative playscapes** which are an attempt to create the civic space for children to enhance early childhood development in the inner city.

Early childhood development being defined as ‘an umbrella term that applies to the processes by which children from birth to about eight years grow and thrive, physically, mentally, emotionally, spiritually, morally and socially.’ (Ministry of Education 2001:5) The main idea of this is to bring the life and culture of child care into the broader public view with the notion that If a city is friendly for children then it is friendly for everyone.

Is the inner city of Johannesburg suitable for early childhood development? Contemporary inner city Johannesburg is a very densely built up urban landscape that is geared for economic activities. It is also home to a rapidly increasing residential population from the lower tiers of the economic spectrum. In such a context the inevitable congestion as a result

of the concentration of a large population in one area, disruption of family ties as a result of migration from rural areas and across the borders are among the forces that do not create a child friendly conducive educative environment.

Complementary and safe spaces in the inner city for formal child care are thus an after thought, consisting of reappropriating existing commercial or residential spaces in claustrophobic conditions that are not suitable for young children. Key issues which must be addressed in attempting to integrate early childhood development within the inner city of Johannesburg include:

- How does one balance sufficient monumentality to express the seriousness and significance attached by society to education with a smaller more playful scale appropriate to children.
- How does one provide stimulating spaces for play and development?
- How does one address safety, privacy, access concerns?

- How such an infrastructure can fit into both the fabric and functionality aspects of the existing city?

The scope of this study has been limited to the north east quadrant of the CBD as the focus of the study as it was not possible to study the entire Johannesburg Inner City. As there are different groups of children with different needs, children in the preschool going ages of 2-6 years will be the subject of this study as in this period they start to use the outdoor environment more by themselves and become much more acquainted with it.

Armed with an increasing urban population of which a significant quota will be children, it is imperative that a proactive approach be adopted for early childhood development in the inner city. The United Nation estimates that by 2025 half of the population of the continent will reside in cities (UN,2000). The 2001 South African population census revealed that the population of Johannesburg was 3.2 million and 15% were children aged between 0-9 years (Statistics SA,2001).

It is against this backdrop that there is a need to create spaces that matter, uplift the spirit

and allow young people to enjoy thriving childhoods in the inner city. Within the context of the inner city, buildings and the spaces between them constitute the environment in which we live our lives. These places are used by all of us and cared for by few of us, yet they may be defined as ‘settings for life’ and represent an unequalled opportunity for the creativity and imagination of an ever increasing cast of players. This provides a challenging framework within which to work under.

## Motivation

In describing the urban environment, Leach iterates that “*the metropolis constitutes a complex web of social interactions, difficult to understand but having an important role in contemporary society as it features in the public domain as a symbol of modernity*” (Leach 2002:9). this reinforces the notion that the city is an existing condition that will not disappear anytime soon. The contradictions and problems associated with the city have thus to be resolved.

And among the challenges of modern society in Johannesburg are ‘*the rising number of single-parent families, an increase in the number of young delinquents, an increase in the number of migrant workers putting an additional strain on health care, education and other social structures*’ (van Rijswijck, 2007). This exacerbates the already problematic issues of preschool education as there is a lack of spaces to play and achieve that education.

Concomitantly is the problem of ‘the culture of poverty’ as illustrated by (Raynor, 1974). This is when financial hardships, squalid environments and lack of opportunity blend to create an intoxicating brew of apathy and dependence on public aid perpetuating the cycle of poverty. The importance of education cannot

be over emphasised in the struggle to alleviate poverty as studies have alluded to fact that children who are exposed to structured early childhood development programmes tend to go on and achieve higher levels of income and education. (van Rijswijck, 2007). This becomes a means to break the cycle of poverty as economic and social independence for these individuals would imply less reliance on public aid.

In the inner city there are tight spatial constraints. The traditional school model of abundant land in a tranquil environment and its relevance in the inner city becomes questionable. Currently the Johannesburg metropolitan region has about 3000 registered crèches but only a third of them are registered and comply with health by-laws. (Pabale, 2009). Inner city children are thus desperately in need of proper preschooling, as the area is almost devoid of good, well-run public preschools. (Visser, 2008)

Architecture becomes part of the solution through the creation of the necessary positive environments that support early childhood development. ‘*The purpose of architecture is to help make human existence meaningful*’ (Bradley, 2008) and preschool years become an

important period in a child’s life as these spaces become a child’s first entry into the adult world. School buildings therefore allow a child to learn, play and grow by providing a positive environment: space for development, a landmark in the neighbourhood, and safety.



## Approach

The thesis began with an examination of childhood growth and development. The history and theories of early childhood development were both looked at in order to gain an understanding of the environments which best nurture this development. Through this the concept of play was established as a crucial element in the process of how children learn. An understanding of the importance of play was undertaken through literature studies so as to inform the programme at an urban scale and to identify a target age group.

The context of the Johannesburg inner city was looked at to provide further insights into the prevailing conditions of the context. The nature of existing child care facilities and urban spaces that can facilitate childhood development was looked at to highlight how contemporary child care in the city is removed from the public view. From this it was determined how the Johannesburg inner city is deficient with regard to being an enabling environment and help inform how this situation could be improved.

Precedents of contemporary radical urban interventions were looked at precisely because they have repercussion on civic life and this

thesis attempts to bring to the public the culture of child care. Precedents for both educational and child care facilities have been used which illustrate how children can be critically engaged by the environment through architectural interventions as well as the role such facility can play in provision of learning environments and in the community. Local and international precedents have also been looked at to establish how an improvement in the quality of urban spaces can be achieved by business and government working together.

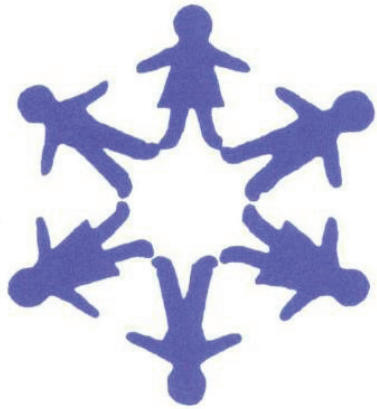
It is hoped that the outcomes of this investigation will be a facility that will greatly benefit the community as well as its users and will be relevant in both the physical context of the inner city as well as the socio-economic context of the engagement of learning through play.



## 02. Childhood Growth and Development

## Theories of Child Growth & Development

Psychologists have been unable to exclusively credit either heredity or the environment with a complete and exclusive role in the development of intelligence. (Dattner 1969:23). The naturalistic, nurturist and interactionist/constructivist perspectives (Seefeldt 1994:32) are identified as ways of looking at childhood development. None of the theories however can fully explain all of human growth and development. They become useful in gaining a broader perspective of children as they thus function.



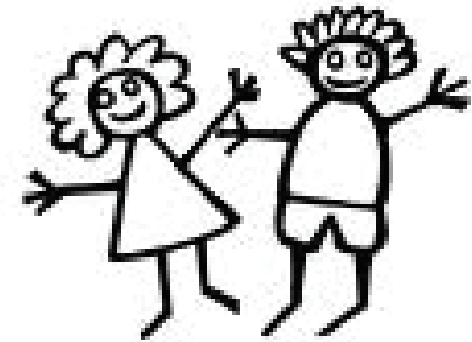
Childhood development  
(Source: [www.google.co.za/images](http://www.google.co.za/images))

### The naturalistic perspective

The **naturalistic perspective** as derived from philosophers like Jean Rousseau (1712-1778) viewed children as unfolding like flowers in a natural logical way according to an innate plan (Seefeldt 1994:32). From this naturalistic view of believing that basic progression of development was inherent and due to the process of maturation, it was believed therefore that each child would progress according to their own development clock.

Rousseau In his book L'Emile ou 'Education stresses the importance of beginning a child's education at birth. He felt that children should be raised in the country with the education left up to nature. (Farmer 1999:59). Rousseau emphasised that it was important for children to develop their natural instincts with a child's **play** being their natural occupation (Seefeldt 1993:301). The freedom and **spontaneity of play** becoming the mechanism through which children's learning takes place.

Johann Pestolozzi (1746-1827) shared this ideal of naturalistic philosophy and thought that education begins in the home, through **play and sensory experiences**.(Seefeldt 1993:3). He however disagreed with Rousseau's idea



The Mobile Play  
(Source: [www.google.co.za/images](http://www.google.co.za/images))

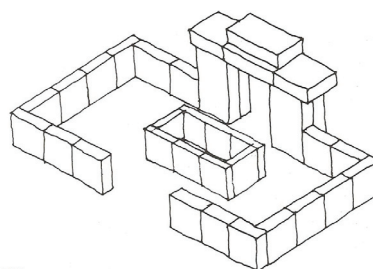
of education in isolation (Dudek 2005:44) and included stimuli such as drawing, writing and talking in the context of the group learning.

### The nurturist perspective

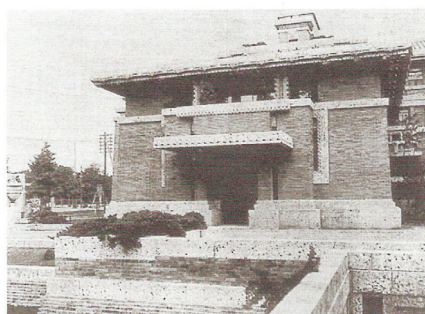
The **nurturist perspective** as set forth by John Locke (1632-1704) maintained children as passive and receptive, with learning being the result of the minds receiving stimuli from others and the environment (Seefeldt 1994:32). He was also of the opinion that it was important to take into account the nature of each child (Biehler 1976:39). This train of thought led to contemporary behavioural theorists such as Skinner (1974) to believe that learning would come about as a result of receiving a reward for an action or a correct response to a specific stimulus.

Others however such as Bandura & Walters (1969) were of the opinion that not all learning was a result of direct conditioning. Instead children would observe behaviour and form mental pictures of it and in future **imitate the observed behaviour during play**.

Another key influential educational theorist was Friedrich Froebel (1782-1852). He believed that the **random nature of child like play** be organized into a systematic way of learning initially through a child contacts with simple three dimensional objects. (Dudek 2005:57). The 'Froebel' gifts were intended to introduce



2.23



2.24

Froebel block pattern compared with Wright's Imperial Hotel.

(Source: Dudek, 2005:57)

the child to the ideas of order and beauty. The most well quoted architect to have been influenced by his childhood experiences is Frank Lloyd Wright who described **the significance of playing** with these blocks as a child and whose later formal strategies in design have been argued to have stemmed from the early experiences. (Dudek 2005:60) (Curtis 1996:115).

### The interactionist/constructivist perspective

A third way of looking at the nature of human development is the **interactionist/constructivist perspective** as derived from the work of Jean Piaget (1896-1980) & Vygotsky (1896-1934). These theorists emphasize that learning takes place as a result of interactions between the child's natural unfolding or maturational development and environmental influences or stimuli. (Seefeldt 1993:33). **Play becomes of great value** as children first learn about the world through it.

Piaget maintained knowledge is created as children interact with their social & physical environment (Dattner 1969:24) (Seefeldt 1993:40) through assimilation & accommodation. Assimilation being mastering of familiar or new skills by repetition and practice, accommodation being changing the already acquired skills to include new situations through the medium of playing. Vygotsky suggested that **as children play** problem solving skills are learnt as tasks are done independently or under the guidance of an experienced peer or adult (Seefeldt 1993:41).

## Play and Learning

The importance of play in the early years of life has been highlighted by a number of authors (Dewey 1913)(Piaget 1962). 'Play is a child's way of learning i.e. The way in which children develop intelligence.' (Dattner 1969:23) (Erikson 1985:4). 'children learn best by playing and imitating others.' (Davin 2004:6). 'for the young child play is believed to be the basis for learning' (Seefeldt 1993:298). The setting for play - a varied and stimulating playscape, should provide opportunities for that growth and development.

While it is generally true that children do play anywhere and everywhere, it does not stand to reason that careful consideration of the environment in creating appropriate spaces for play will stifle the child's creativity. On the



ABC

(Source: [www.gettyimages.com](http://www.gettyimages.com))

contrary properly considered play and learning environments should stimulate learning and development as an additional benefit afforded by the shelter and protection of that varied playscape.

Analyses of play based on the interactionist/constructivist perspective of childhood development sees a the division of the growth of children into the stages of infant, toddler, preschooler and early primary scholar each with their characteristic forms of play namely practice play, manipulative/ symbolic play, constructive/dramatic play & games with rules. (Dattner 1969:24) (Erikson 1985:5) (Seefeldt 1993:313).

The stages development vis-a-vis physical, social, emotional and cognitive of children are interrelated with development in one area influencing another area. The proceeding section provides a summary of the interactionist/constructivist analysis of play based on the general expected normal growth and development of children from infancy to early primary school.



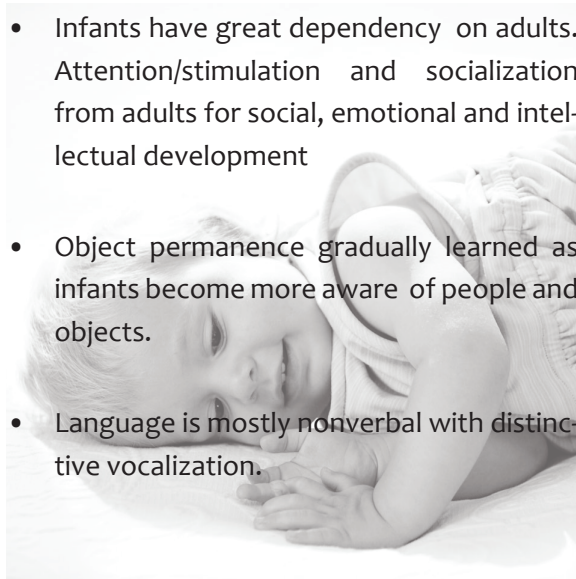
Handprints

(Source: [www.google.co.za/images](http://www.google.co.za/images))



## Infants(0-12 months)

- Infants physical development is rapid from birth . They start to learn to sit crawl and creep.
- Infants are born with instinctual reflexes such as sucking, grasping which gradually change to active responses.
- Infants have great dependency on adults. Attention/stimulation and socialization from adults for social, emotional and intellectual development
- Object permanence gradually learned as infants become more aware of people and objects.
- Language is mostly nonverbal with distinctive vocalization.



Infant (Source: www.google.co.za/images)

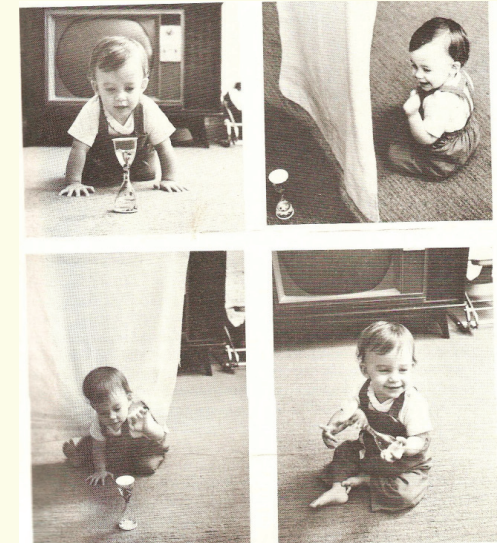
*This phase of infancy is marked by **practice play**. The characteristics of practice play are repetition and pleasure in being the cause of an external event.*

*An example being a child who has recently discovered that when he lets go of an object it falls to the ground. Over and over it will be picked up and dropped.*

*The pleasure of being the cause of an external event is an expression of the child's satisfaction with himself and their environment*

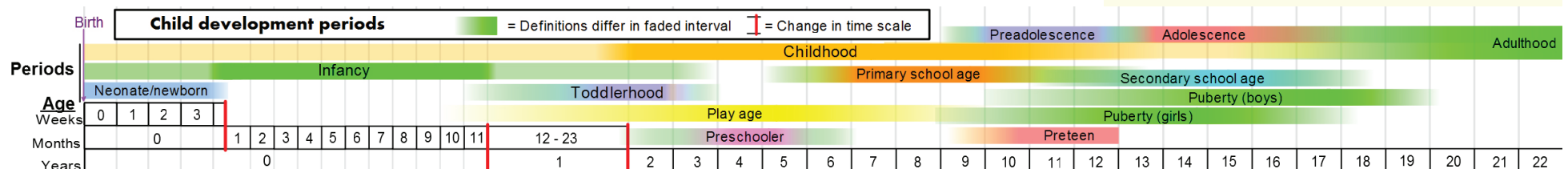


Infant (Source: www.google.co.za/images)



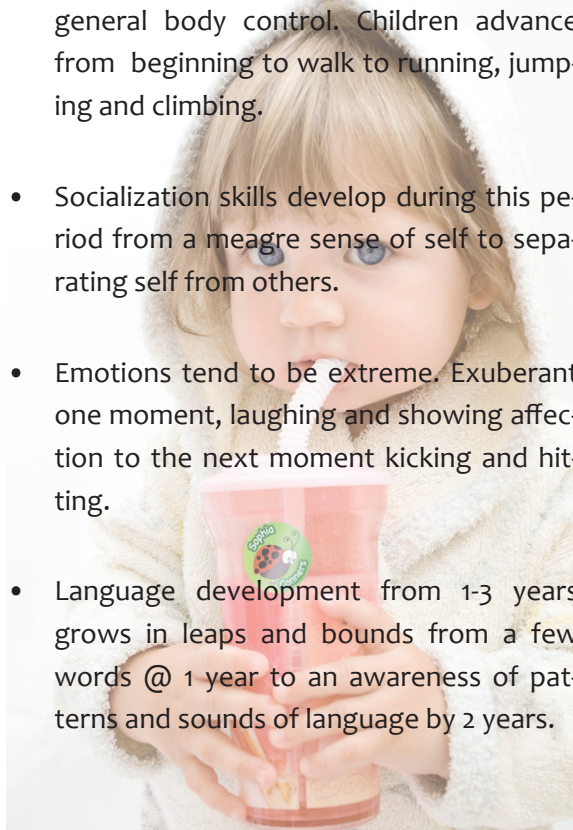
Practice play. Development of object concept enabling infant to search and find object. (Source: Biehler,1976: 305)

**Stages of child development.** (Source: www.wikipedia.org)



## Toddlers(12-36 months)

- This is a time of tremendous growth in general body control. Children advance from beginning to walk to running, jumping and climbing.
- Socialization skills develop during this period from a meagre sense of self to separating self from others.
- Emotions tend to be extreme. Exuberant one moment, laughing and showing affection to the next moment kicking and hitting.
- Language development from 1-3 years grows in leaps and bounds from a few words @ 1 year to an awareness of patterns and sounds of language by 2 years.



Toddler

(Source: [www.google.co.za/images](http://www.google.co.za/images))

For toddlers, **manipulative play** is an essential part of the child's activity in the early years, furnishing them with a new way of assimilating the newly emerging skills of representing objects and events.

Thus a stick might become a boat or a child might play at being another person. Until generally 4 years children are so involved with themselves that little attention is available for activities of other children.

**Play is primarily individual** even in the occasional interaction and presence of other children.

This exposure to other children is important to prepare the way for the future when greater socialization occurs.



Manipulative play. Using the junk of cartons, crates and cans for play.

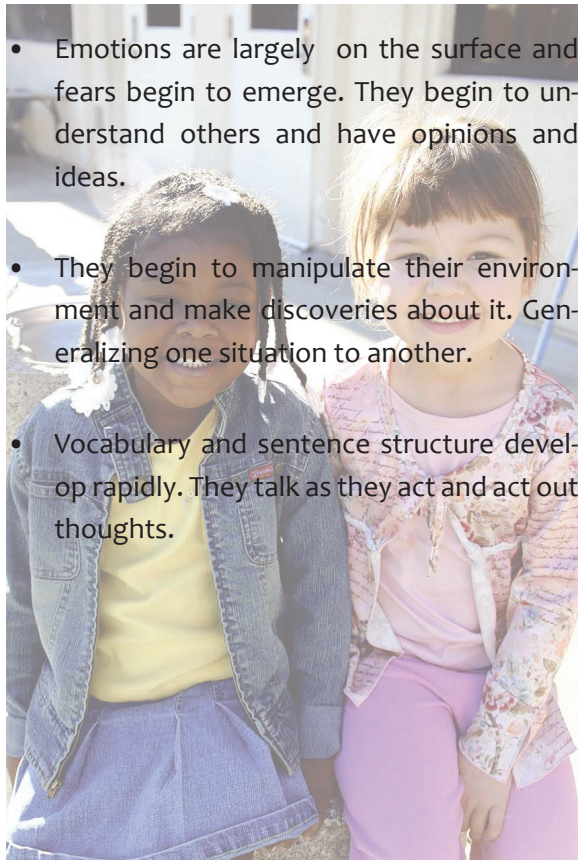
(Source :Dattner 1969: 59)





## Preschoolers(3-4 years)

- Preschoolers have extremely high energy level. Fine-motor development is nearly complete, hand dominance is established.
- At this stage children are happy to play side by side with each other. Sometimes they cooperate in their play but often not.



Preschoolers

(Source: [www.google.co.za/images](http://www.google.co.za/images))

- Emotions are largely on the surface and fears begin to emerge. They begin to understand others and have opinions and ideas.
- They begin to manipulate their environment and make discoveries about it. Generalizing one situation to another.
- Vocabulary and sentence structure develop rapidly. They talk as they act and act out thoughts.



Play. Satisfying natural curiosity by doing.

(Source :Dattner 1979:30)

**Symbolic play** appears with increasing complexity in the preschoolers socio-dramatic play. In symbolic play, an object, action, gesture or verbal substitution is used to represent the real situation.

*The child takes on roles pretending to be someone or something else.*

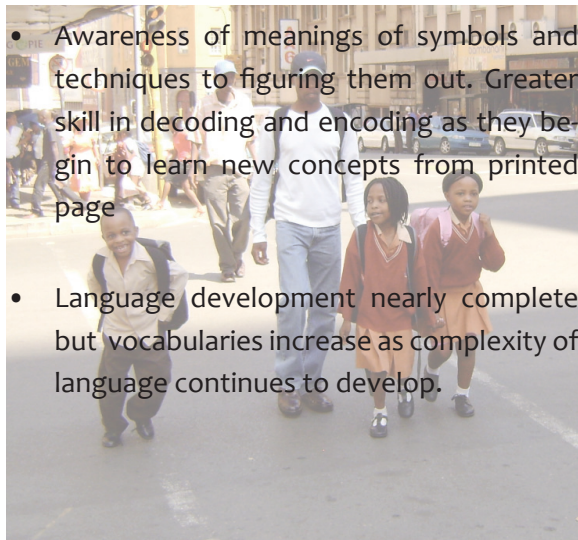
*While elaborating on reality and re-arranging what they know of the world, children develop their creative ability. In play, children generally **sort out fantasy from reality**.*

*As children **negotiate the roles they will play**, they begin gradually to accommodate different viewpoints. Play allows children to increase their knowledge of the world by doing, exploring, testing out their environments and perfecting skills.*



### Early primary scholar(5-6 years)

- Well developed fine motor skills and physical agility
- Increasingly social. They form friendships, tending to move in and out of groups.
- Generally outgoing, self assured , socially conforming , eager to participate in games but have a strong need to win.
- Beginning to be aware of their emotions and sometimes alarmed and puzzled by conflicting feelings they have. They possess a sense of their own past and future



Primary school children crossing an inner city street in Johannesburg.

(source: author)



Learning to work together to achieve mutual goals in play.

(Source: Dattner 1969:31)

Play continues to be important for children through primary grades as it involves perfecting physical skills and learning about rules and the ability to follow them

The increasing ability to take the viewpoint of another into consideration enables playing with games.

There is a general increase in the ability to develop objects that have function or use fostering creating and constructive play governed by a concern of rules.

## Conclusion

These theories afford divergent but valid knowledge about childhood growth and development. The common thread of **play** occupying a role in the **process of learning** emerges.

In the context of the play occupying a meaningful role in the inner city of Johannesburg, there is a need for the encouragement of **spontaneity of play**. This suggests an urban framework that acknowledges this as a variable to complement play.

Group learning plays an important aspect of structured learning and the importance of adults as both active & passive participants is highlighted. Family and community participation becomes necessary particularly promoting skills development levels for primary caregivers. Built forms for such empowering become a useful resource.

Environmental stimuli are important as an increase in knowledge of the world is attained by testing this out. Urban frameworks and built forms will thus tackle the key questions of monumentality versus scale, stimulating spaces, safety and privacy and integration.

As previously highlighted age becomes an important factor to consider since there are different age groups of children with different needs, and so this will inform the programme with the proposed framework having to acknowledge this as well.

In addition to these theories of development, it therefore becomes useful to now focus on the conditions and experiences of children in the urban environment.



### 03. Children in the Urban Environment

## Children in Cities

### City Playspaces

The research programme Growing Up in Cities by Lynch (1977) was an important initial contribution to a scholarly understanding of the condition of children in urban areas.(Chawla & Malone 2003:118).

Previous research of programmed child spaces comprised urban environments that are deliberately and specifically constructed for use by children such as parks and playgrounds. (Gleeson & Sipe 2006:90). Lynch's study encompassed the children's use of unprogrammed space. i.e space comprising of street or courtyards where children could meet and play informal games. The study also highlighted other obstacles children encountered in negotiating public space, such as dangerous traffic and lack of spatial knowledge.

Complementary research by peers, Berg and Medrich (1980) looked at the impact of the physical environment on access to play space and children's social interaction and how safety and mobility affected play. Berg and Medrich made two important observations in

relation to safety and mobility:

- Urban spaces with poor physical accessibility had fewer spontaneous activities than area with high accessibility,
- Children sought out unplanned play space where they were free to explore the area and invent activities.

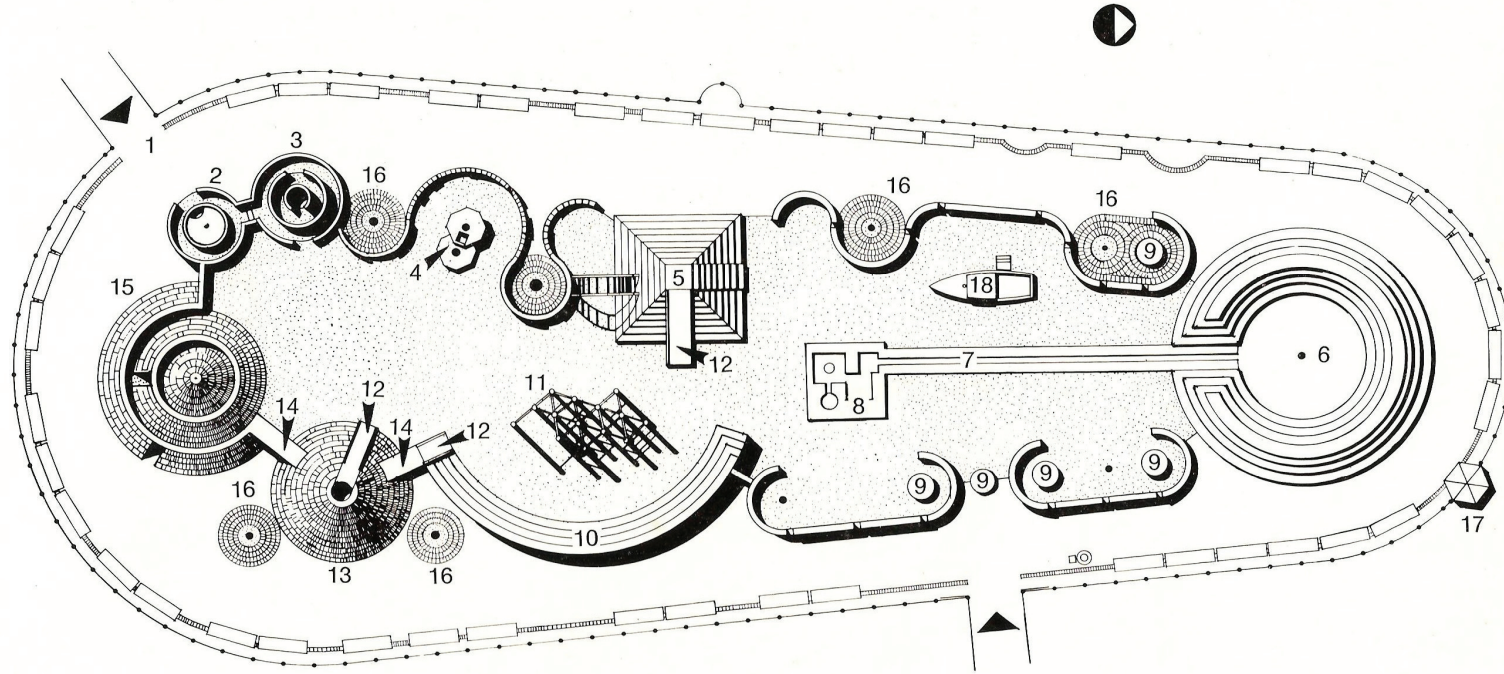
Furthering on accessibility issues, Gaster argued that children had been cut off from safely using their neighbourhood since 1970's as a result of increasing crime, automobile traffic and deterioration of parks.

### Playgrounds

In the city formal play occurs on playgrounds which are on sites set aside specifically for this purpose, generally having an advantage of an ideal sufficient area to serve a large number of children with a comprehensive programme. These can tend however to be often at some distance from the home of many persons who use them.

One of the earliest attempts to create a playground with the possibility for children to create their own places within it is the adventure playground in New York City. Its concept involves a group of small varied but related elements surrounding a large central space allowing children to choose between different activities whilst always feeling part of the larger whole. (Dattner 1969:75)





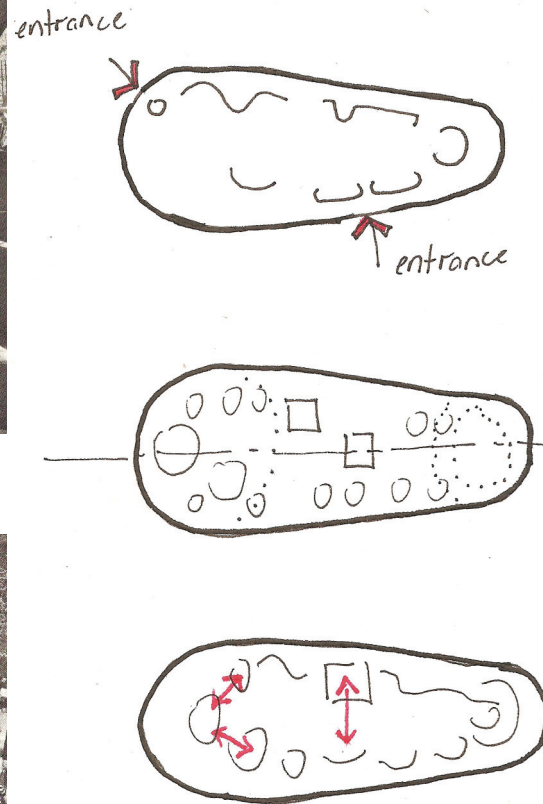
Adventure playground , plan  
(Source: Dattner 1969:75)



Adventure playground., north view  
(Source:Dattner 1969:76)



Adventure playground., south view  
(Source: Dattner 1969:76)



**Enclosure.** A perimeter fence acts as a security barrier with seating along the fence for parents to oversee the children. Within the park, play elements offer secondary enclosures and secret spaces for children to hide.

**Symmetry and geometry.** The degree of symmetry in both the shape and arrangement of play elements and related playful activities is around a linear configuration running the entire park length. The playground consists of regularly shaped masses that give varied playful opportunities for interaction.

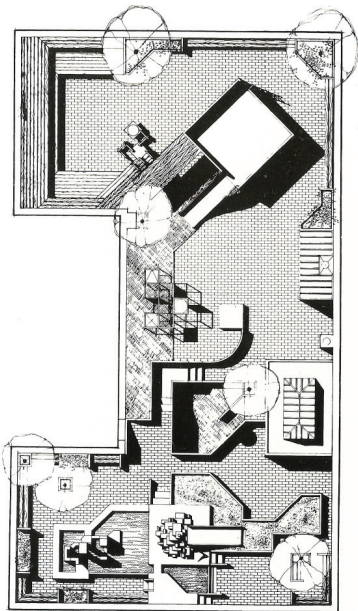
**Connections.** Elements of the playground are linked to one another in a playful manner. Walls, ladders and slides connecting to create a unified whole.



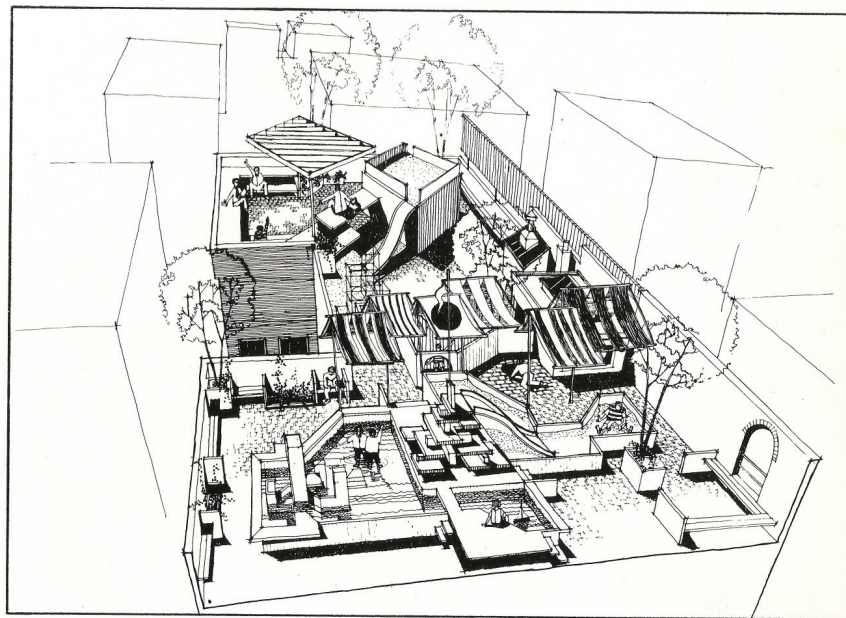
## Roof play

As open space diminishes in urban areas, roofs and platforms become attractive possibilities for locating play activities. (Dattner 1969:120). At roof level, there is abundant fresh air and sunshine in contrast to the streets below.

An example is the Little Red Schoolhouse playground in New York where a school rooftop has been developed onto an exciting and varied play space for 4-6 year old's. The children can climb, slide, play in sandboxes. (Dattner 1969:20)



Roof playground, plan  
(Source: Dattner 1969:121)

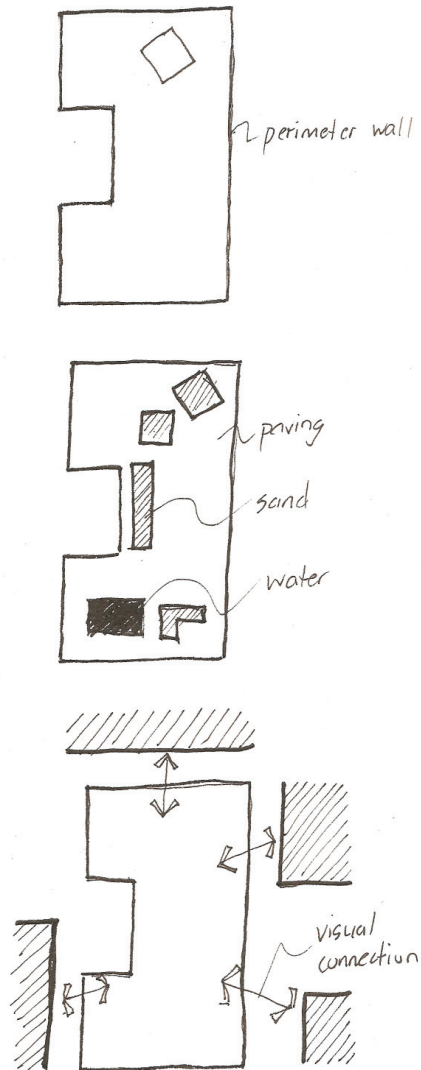


Roof playground, perspective view  
(Source: Dattner 1969:121)

Geometry and Enclosure. Building footprint constitutes the extents of the playground. Masses of different sizes create playful opportunities. Outer perimeter wall defines and provides enclosure.

Materiality. Various textures are used, sand, paving, and water to increase possibilities for playful engagement and make the playground visually appealing

Visual Connections exist between the playground and adjacent surrounding taller buildings creating an audience for the playground actors.





## Play in the street edge

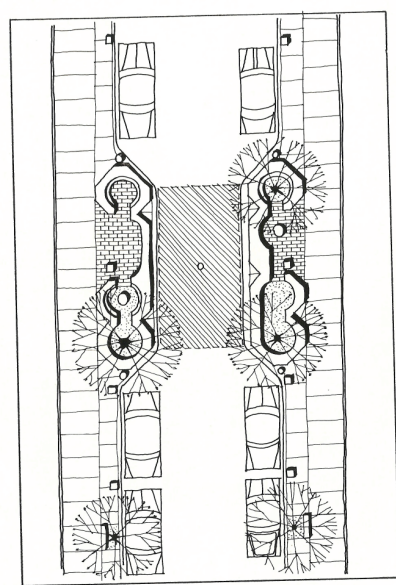
Children have long since discovered the possibilities for play inherent in urban street furniture (Dattner 1969:125). well designed street furniture can transform standard objects into points of play. The following proposal illustrates utilizing a sidewalk and street spaces



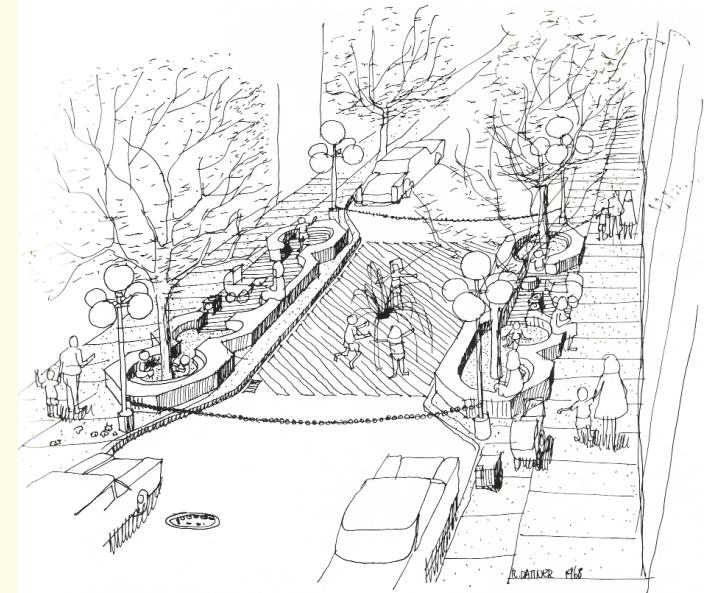
Play with urban street furniture  
(Source: Dattner 1969:125)

that is usually given off to parking and to provide a play node. The spaces illustrates how to adopt sidewalk space to cater for play.

Different materials are used depending on the type and level of playful activity and the maturity of the children at play. Areas are provided for both children and guardians. Trees provide shade on hot days and lighting ensures that play is possible late into the evenings



Street play node proposal  
(Source: Dattner 1969:127)



Street play node proposal  
(Source: Dattner 1969:127)

## City Learning Spaces

Preschool learning facilities have manifested themselves in the form of the 'kindergarten' as an architectural type. The term kindergarten here being used to define child care programmes which cater for the needs of preschool children, stressing an importance of learning through play as a defining aspect.



Epinay Nursery School . (Source: [www.archdaily.com](http://www.archdaily.com))



Epinay Nursery School . (Source: [www.archdaily.com](http://www.archdaily.com))

The term 'kindergarten' which originally derived from the notion of the school as a metaphorical garden, alludes to the idea of children unfolding as plants. (Dudek 2005:1). In a traditional society, grandmothers & extended family provide support, knowledge and reassurance. During this maturation process, a condition which is less practical in the nuclear families in the inner city. Child service programmes afford the formal environment that addresses the need for formal learning.

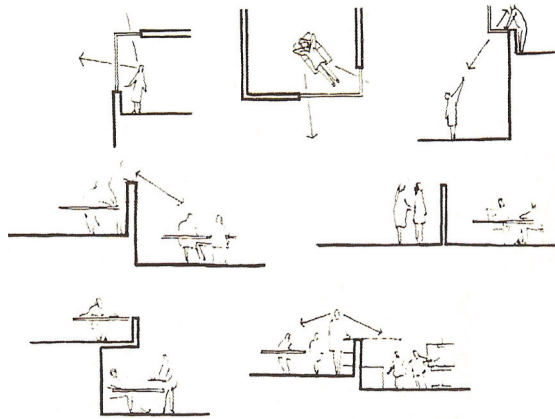
At the child care services, the child discovers and establishes relations, plays with other like himself, inaugurates his own socializing experience and his incorporation into group life.



## Precedent

### Montessori School in Delft

Designed by Herman Hertzberger, the design brief called for a school that enhanced the development process of children. The school is made up of a series of spaces which allow children to feel safe within the context. The usual row of classrooms was to be avoided and there needed to be a richness to the building. The architect believes that 'spaces should be articulated in such a way that places are created.' (Hertzberger 1991:193)



Playful spaces

(Source: Hertzberger 1991:202)

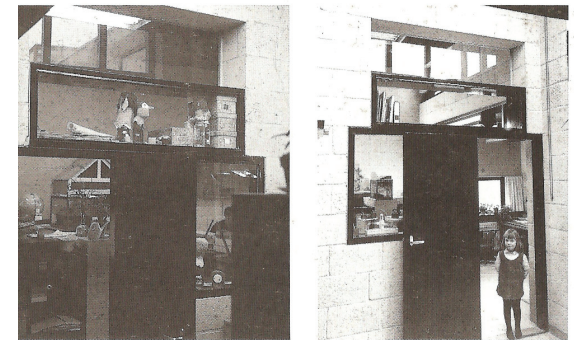
The plan of the school sees classrooms clustered around a central hall space. The threshold spaces of classrooms promote the interaction of the children. There is an abundance of smaller spaces as opposed to a few large spaces. These articulated spaces are according to the spatial units whose appropriate dimensions accommodate the users.

The notion of the street is used to articulate circulation throughout the school. As one moves



classroom configuration with central space

(Source: Hertzberger 1991:202)



Thresholds that can be constituted per users requirements

(Source: Hertzberger 1991:202)

through the school there are changes in privacy gradients from private to public spaces. Hertzberger creates playful elements within the building and pockets of space outside it, all relevant to the scale of a child and allowing the child to manipulate its environment in a playful interactive way.



Central podium in hall for spontaneous gatherings  
(Source: Hertzberger 1991:153)

#### Lessons Learnt:

- Children need space to explore and experiment.
- Connection to context is important
- A range of spaces is required for private/public function
- Children define scale and scale defines accommodation
- Child space should be playful and celebrated.
- Manipulation of space necessary for children

#### Conclusion

As has been demonstrated thus far, for the young child creative interaction between the individual and the environment is essential for the development of intelligence.

A small change in word from playground to playscape opens the door to a new perspective. Playscape implies a wider physical environment, greater freedom and leeway to bend the rules, an inspired alternative arises encapsulated in playful intervention essential for a urban environment.

Herein lies the potential to create an urban context that enables a spontaneous sense of surprise and allows scope for our young citizens to play. In addition, a play oriented inner city can give a positive allure to the city.

## Inner city Johannesburg Context

### Brief Historical Overview

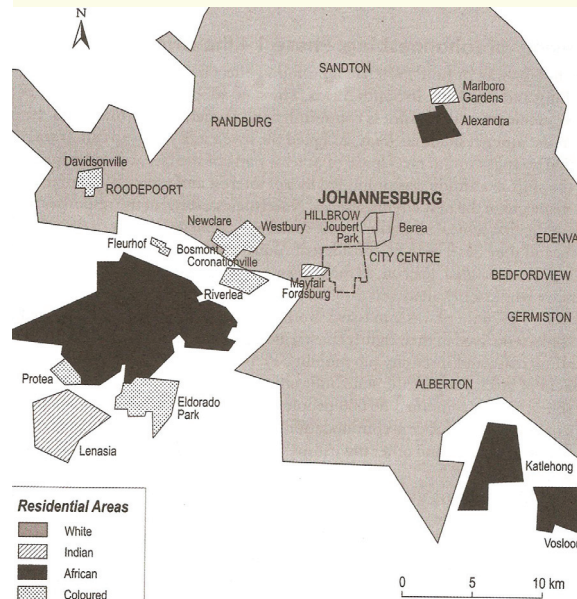
Modern Johannesburg began in 1886 when public digging commenced on a unclaimed triangle of land called Randjeslaagte, tucked between 3 farms of Braamfontein, Doornfontein and Turfontein. (Beavon 2004:20)

After the gold discovery, Johannesburg became within a short pace of time the financial hub of sub-saharan Africa with the existence of banks, finance houses and mining headquarters. However as a result of the long history of segregation the city became distinctly exclusionary. Legal Instruments such as the 1923 The Urban Areas Act, to the Bantu Homelands Citizens Act of 1970 denied a great number of people ,mainly blacks, opportunities afforded by access to city by regulating the presence of Black people in urban areas.



Farm Boundaries & Mining Camps 1886

(Source: Van der Waal 1987:xvi)



Group areas of Johannesburg at the end of Apartheid  
(Source: Beavon 2004:214)

During this period of racial segregation, The residential population of the inner city included single young upwardly mobile, childless married couples and retired wealthy white people who favoured the location as it gave them modern living and easy access to the CBD.

The North east quadrant of the city became recognizable as the inner most fashionable high density residential area of the city. Successive booms in the 1930s and 1950s in white Johannesburg saw the erection of apartments further north of the edge of the CBD in Hillbrow and Berea.

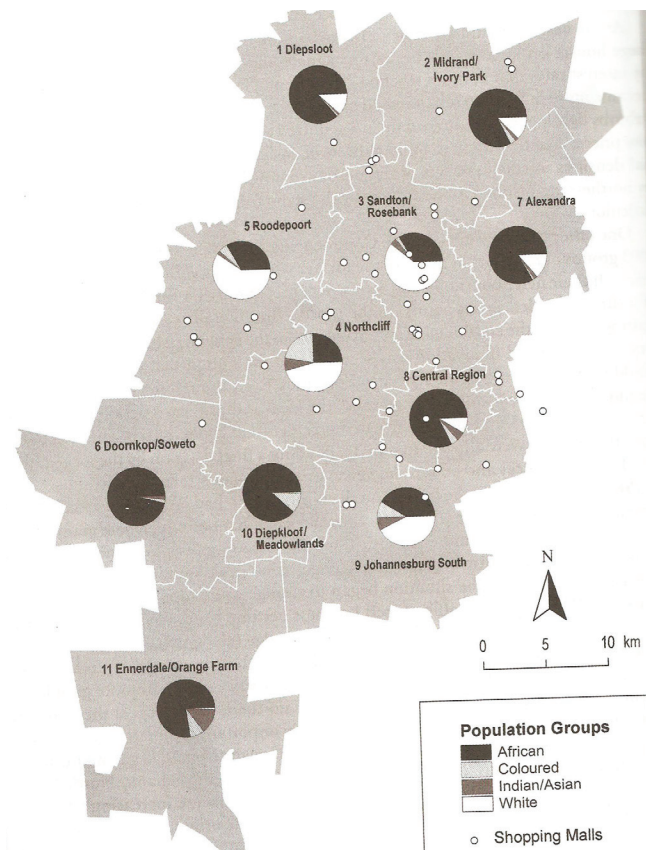
The CBD was Johannesburg's major retail and commercial zone until the change began in the late 1970's with the suburbanisation of retail and commerce. The emergence of malls in the suburb saw the numbers of white shoppers decline in the CBD coupled with the northward movement of office based activity and medical practitioners. (Beavon 2004:208). This resulted in massive changes to the demographic structure of the previously residential structure of the inner city when many white people left the area.



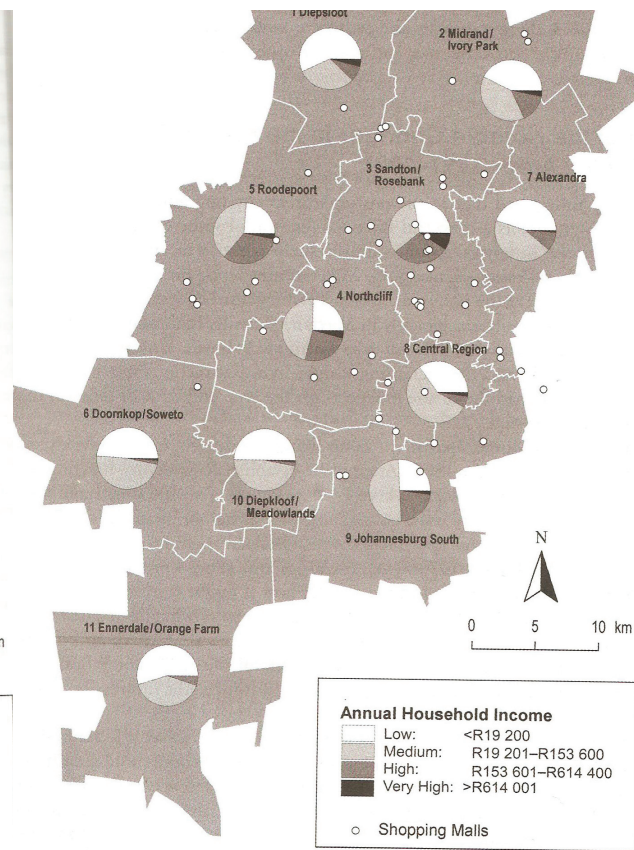
Throughout the 1990's this was exacerbated by poor urban management, increasing population pressure, informalisation and deregulation. The manifestation of this was bad buildings, increase in slums, increase in crime a shoddy urban environment with further propelled disinvestment. Premier firms that left the CBD simply left buildings neglected and in many cases abandoned.

Since 2000, The Johannesburg City Council has implemented a number of successful plans and programmes to turn around the declining fortunes of the CBD, converting old office space into city apart-

ments and inner city improvement districts in an attempt to create dynamic and cultural nodes.



Racial composition across Johannesburgs administrative regions in 2001. (Source: Beavon 2004:264)



Income distribution across Johannesburgs administrative regions in 2001. (Source: Beavon 2004:264)

## Urban Geography

The Metropolitan Character for which Johannesburg is well known was acquired during the 1930's and 1920's when the Central Business District was built up with skyscrapers. A salient aspect of Johannesburg was intensive usage of land. *All street blocks and stands were small and treatment of the individual buildings on those stands imparted a restless and agitated impression.* (Van der waal 1987:165) creating an indifference to people-orientated and horizontally focused community functions, still attributable today in an isolating treatment of park and squares.



Farm Boundaries & Mining Camps 1886 (Source: Van der Waal 1987:xvi)

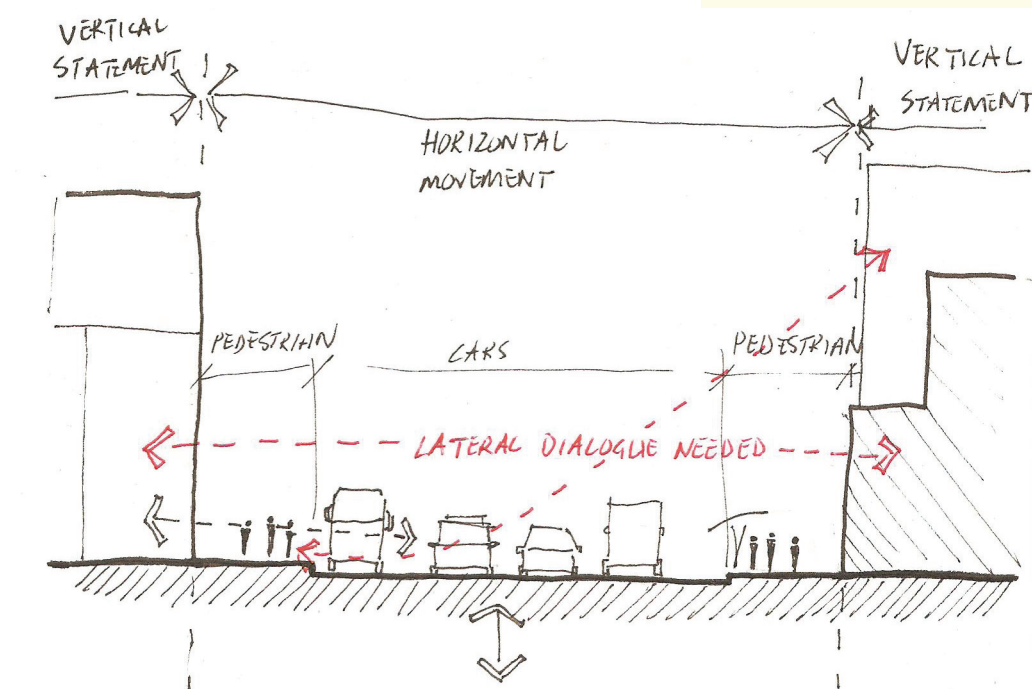
A lack of interest in the significance of open space saw no significant green lungs, recreational areas or lively city squares provided by the city council in an attempt to provide community services in the interest of the common welfare (Van der waal 1987:176). Within the original Randjeslaagte the major green spaces in the inner city today are Joubert and End Street parks.



Randjesgate Triangle (Source: Brodie 2008:45)

The most public of all city spaces, the streets, as a space was utilized largely to project the individual buildings and not a focal point of a communal social and cultural or economic life (Van der waal 1987:177). The same size of street blocks, length and width implied street were treated similarly and this would not aid in creating marks of distinction.

This polarisation between buildings as visual statements and cores of activity and street as horizontal voids persists today where one way streets accentuate the linear movement that has now become an integral part of the city and where street furniture such as traffic lights, rubbish bins are treated as isolated elements in the street aspect and not part of an integrated whole.



Analytic street scenario diagram



## Photographic Survey of Inner city Johannesburg



Many faces of inner city Johannesburg:  
Informal trading meets play?



Many faces of inner city Johannesburg:  
Genuine security concern or vandalism of urban  
street furniture?



Many faces of inner city Johannesburg:  
Blight or untapped potential?





Many faces of inner city Johannesburg:  
Sterile landscape or inappropriate human scale?



Many faces of inner city Johannesburg:  
Typical urban fabric.



Many faces of inner city Johannesburg:  
street pavement, moving forward, looking down?





Many faces of inner city Johannesburg:  
Pavement littering



Many faces of inner city Johannesburg:  
Traffic Hazard



Many faces of inner city Johannesburg:  
Urban Population



## Inner City Context for play



Children playing along Jeppe Street

Children will play anywhere and at any time, but quality play opportunities will only be delivered through a deliberate process. How then does one bring back the needs of the child into mainstreams of planning and urban development and ultimately architecture

In many contemporary cities, changes to societies that are altering social experiences such as the contraction of the public domain and intensification of the city have forced children away from the public realm. (Gleeson & Sipe 2006: 136).

The wider process of the contraction of the public domain is contributing to the inadequacy of public spaces for children. At the centre of the issue are the forces of increasing individualism, diminishing respect for the public sphere and growth of economic insecurity among others.

The intensification of the city characterised by increasing population densities, dwellings and often worsening traffic congestion has significant implications for public and private spaces for children in the city. Many places tend to be restricted or hazardous to access due to vehicle congestion or do not possess varied and





Signage as playing equipment along Plein Street.

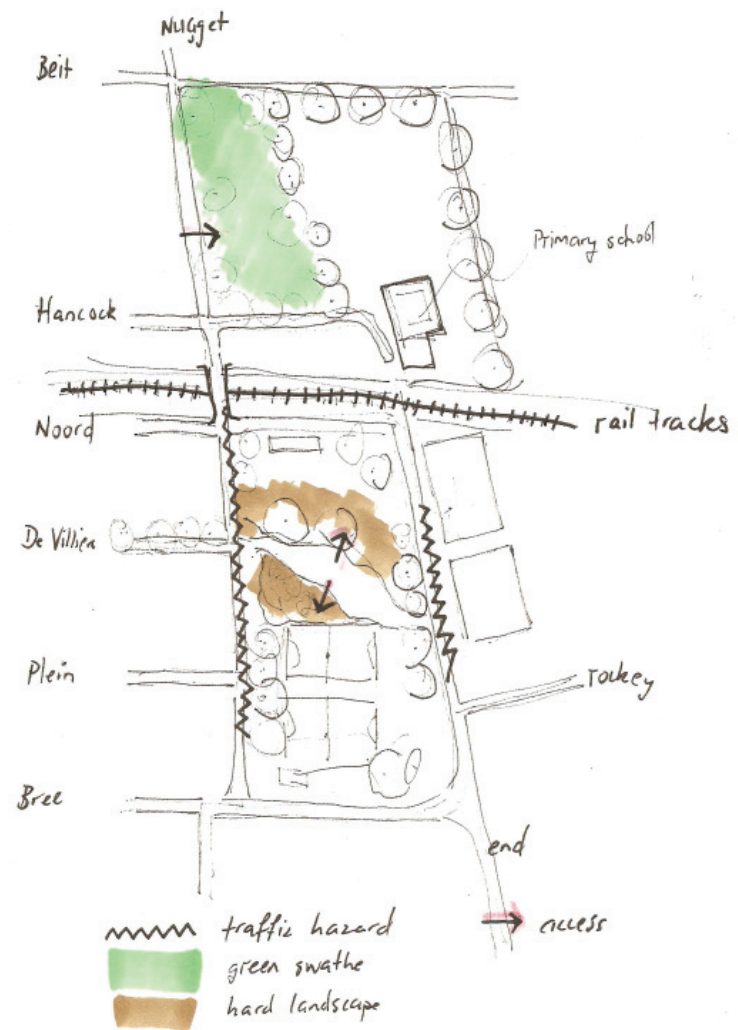
stimulating playground equipment.

It is however in the public realm that children learn many essential life skills, including how to socialize, make decisions, solve problems and gain a sense of belonging.

Within the context of a public realm, The end street park is the only significant formal play infrastructure within the study area of the north east quadrant of the inner city of Johannesburg dedicated for children. Divided into two sections, the north and the south park by the railway tracks.

The north park is a soft landscaped surface that is adjacent IM Harris Primary School. Lack of ablution facilities or passive surveillance by gathering adults sees it not being fully utilized. Regardless of the high density residential flats of Joubert Park across the road. The south park is now a hard surfaced attractive place following the redevelopment by the Johannesburg Development Agency (JDA), with play equipment for younger children and 2 five-a-side soccer areas alongside another for older children. A walkway divides the two areas and ablution facilities and fountain are present.





End street park site plan.

Derived from Google Earth

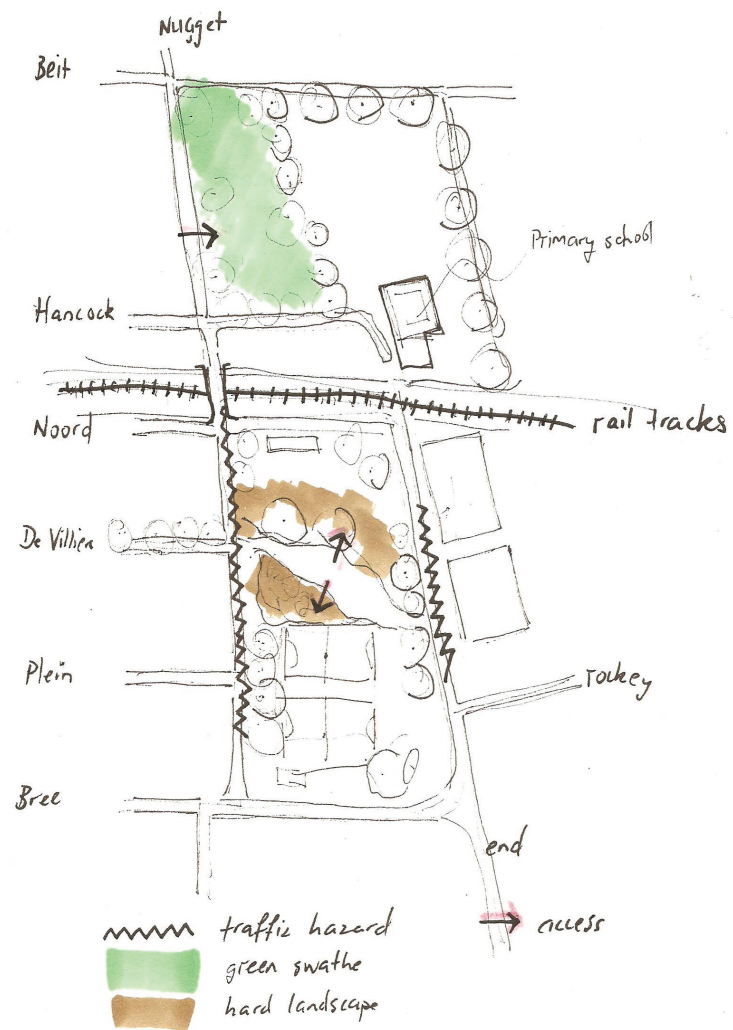


End street park north



End street park north





End street park site plan.

Derived from Google Earth



End street park south, childrens area



End street park south, adults area

## Early Childhood Development in the Inner city

The desired outcomes of the City of Johannesburg (COJ) are to see an adequate number of well functioning early childhood development (ECD) facilities able to access both local and provincial support, compliant with all health and safety aspects for the growing population of the inner city.

The COJ estimated a residential population of 360000 in the inner city in 2008 with the majority being in the low-middle income group. The COJ has also acknowledged that the inner city of Johannesburg has a severe dearth of parks and playgrounds to cater for its rapidly increasing population. A 2005 survey estimated up to 225 ECD facilities in the inner city with only a handful of these registered with the provincial government

A visit to some of the early childhood facilities in the inner city was undertaken. These child-care facilities can be further divided into the noted categories:

- 1. The Preschool: is a learning institution for learners in the year preceding Primary School [4-6 years] where educational play is encouraged and supervised.
- 2. The Day Care Centre : which allows parents to drop off their very young children [0- up to 4 years] during normal working hours knowing they will be in a safe environment under adult supervision.
- 3. Nursery School / Creche : which allows educational play for very young children [0-3 years].



## Inner City Early Learning Centres



Eagles Preschool & Creche. Bree Street.



Rose's Preschool and Nursery. Bree Street



Barbies Preschool. President Street.



Downtown Inner City Preschool. De Velliers Street





Kids Success Preschool & Creche. Market Street.



Progressive Preschool. Nuggett Street.



Rise & Shine Preschool. Jeppe Street.



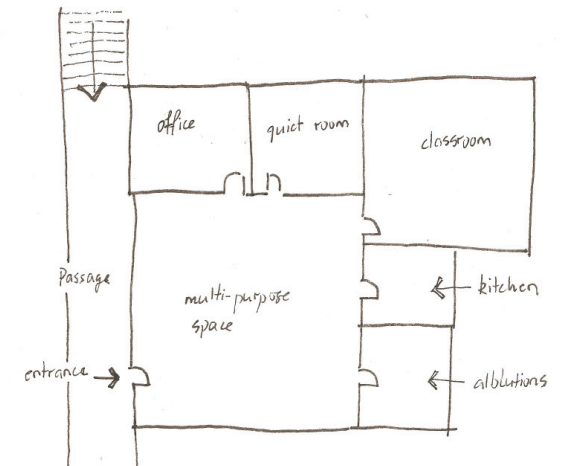
## Eagles Pre-school & Creche



Eagles pre-school & creche.

Located at the corner of Bree and Claim streets, Eagle Preschool and crèche caters for up to a maximum of 40 children on the first floor of a converted office building. Most of the children are from the inner city of Johannesburg and the operation times run from 6am-6pm.

The layout is extremely basic with a multi-functional group room [that doubles up as a playroom], surrounded by a classroom, quiet room office and ablutions. Children are divided into 3 groups [0-2yrs], [2-4yrs] and [4-6yrs]. From the photographs artificial lighting is necessary and bright colours are used to liven up the interior environment.



Sketch of layout showing space usage,



Multipurpose space from entrance door



Multipurpose space looking onto ablutions and kitchen



## Progressive Preschool



Progressive preschool & crèche.

Located at the corner of Nugget and Plein, this preschool and creche is located on the first floor of a refurbished warehouse building, with a primary school on the ground floor, which operates independently. The large open space afforded by the warehouse has been partitioned rationally and similarly to Eagles preschool to create different play areas for the different age groups which are [0-1 year], [1-2 years], [2-3 years], [3-4 years] & [4-6 years].

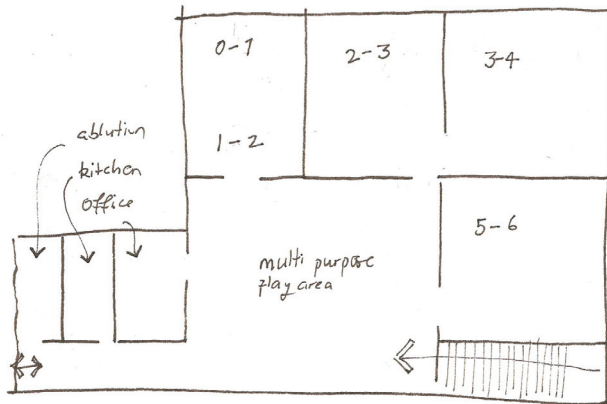
Capacity is for a maximum of approximately 105 kids, operating from 6am-6pm with most kids coming from inner city Johannesburg. Whilst space at progressive is relatively bigger than at eagles and better lit, the lack of outdoor play areas is dictated by the threat of traffic hazards

## Summary of Early Centre Survey

Among the major challenges identified that limit enhanced provision of early childhood education are space and teacher constraints, lack of basic equipment such as child oriented furniture. High rentals charged by landlords which are comparable to rental for commercial entities limit space that can be rented out and outdoor activities are limited.

Teachers are semi-trained and a great deal of improvisation is necessary for curriculum delivery. It was also noted that the demand far exceeds the supply of early childhood development regardless of the impoverished circumstances.

Within the inner city, challenges faced include poverty, necessitating the need to provide nutrition. Road safety, traffic hazards also limit outdoor activities and trips to as far as Santarama in Rosettenville are undertaken. That this institution is able to continue providing such services given this context can be attributed to the dedication of the staff members.



Sketch of layout showing space usage,



5-6year classroom



Multipurpose space

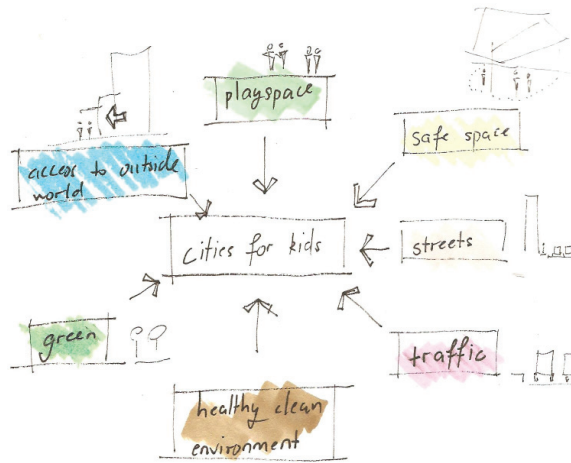


2-3 year play & sleep area



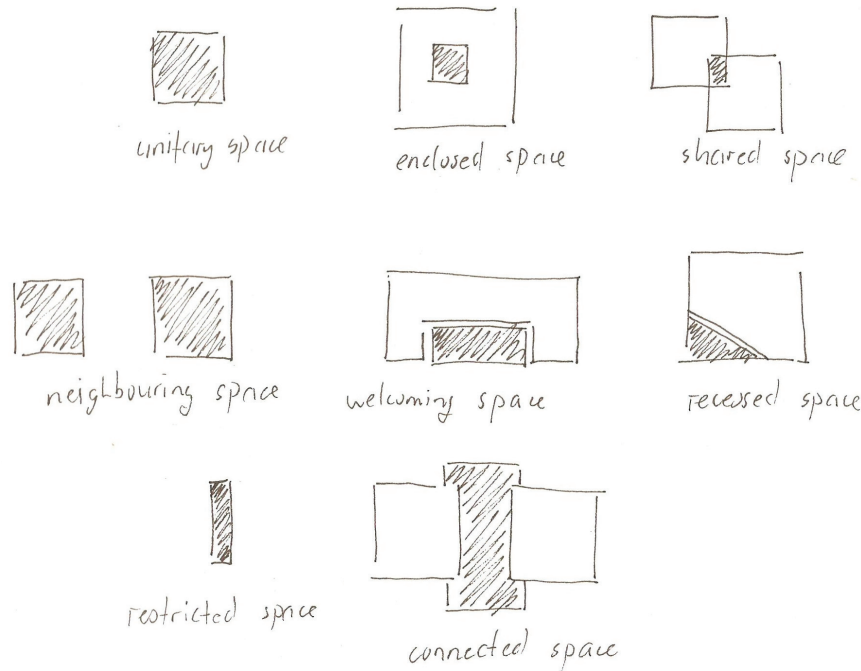
## Conclusion

In addressing the challenge to make Johannesburg inner city better for children, the illustration below is a summary of the issues to be addressed based on the institutional deficiencies evidenced in the preschools and crèches visited.



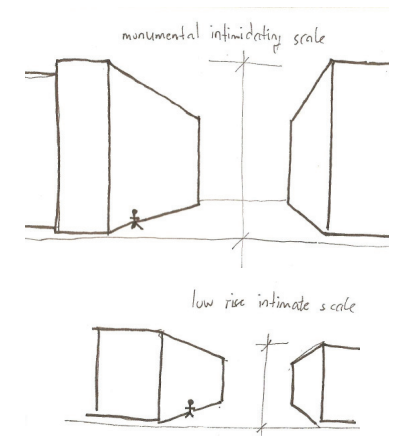
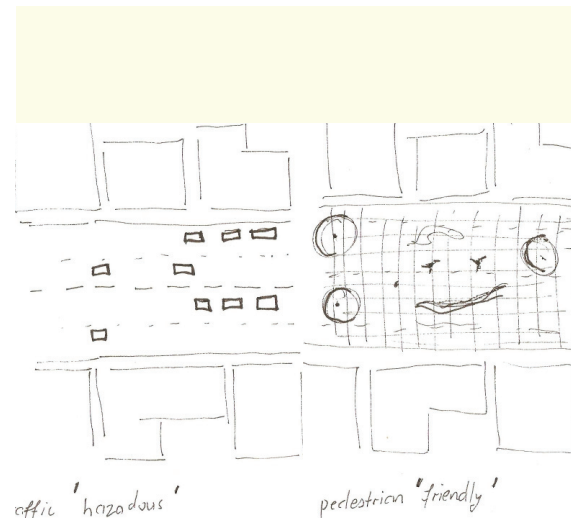
From the enquiry into the inner city context, the following integrative approach has been derived as a basis from understanding children in their environment

The scale and monumentality of buildings in the inner city is overwhelming for children. This has to be considered and integrated for reasons of comfort and security.



Inner city streets act as connecting spaces but are inaccessible due to vehicular domination. This creates an extremely hazardous environment. By prioritizing pedestrian movement over vehicles, a genuinely safe environment is created.

External space in the inner city is dismal as buildings tend not have a dynamic spatial link and resultant external spaces tend to have no meaning. The spaces are not inviting and do not inspire exploration. Child learning is better achieved where spaces offer linkages to context and are inviting.

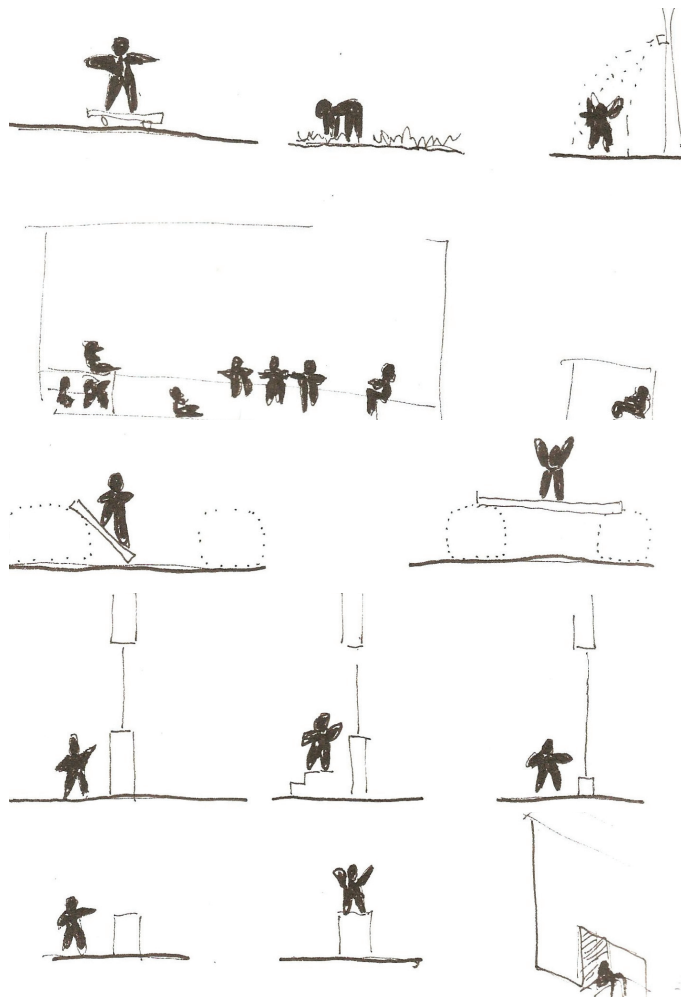


From the enquiry into the requirements of children's needs in the field of learning that define and shape their immediate space that surrounds them, the following premise of architectural elements has been derived that can be used to define that built environment.

Spaces that allow permanence and change offer an opportunity to explore through interactive behaviour. Children can thrive in the opportunity to alter their environment.

Access is a critical element of children's spaces as are defined boundaries of habitable space. A simple change in level would allow a view through a window or lowering the window cill level would achieve the same result.

Children enjoy a challenge that creates a certain level of risk. This allows for exploration and allows for testing the child's abilities and limitations. Repetition gives a sense of accomplishment and familiarity. Children's minds need to be challenged and stimulated. Areas that are both simple and complex provide opportunity for a child to explore the environment. A wall can be a complex object with cut outs or niches to allow interaction.



Hard & soft spaces are equally enjoyable for different activities and result in different stimuli. Nature is also important for learning.

Interaction with nature stimulates senses of touch light and smell. Children enjoy activities that are both social and nonsocial.

Large open spaces encourage active participation and intimate space offers private engagement.





## 04. Precedent Studies

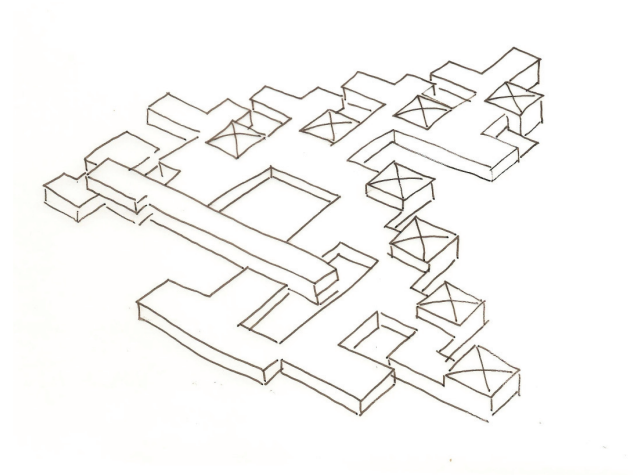
## Orphanage in Amsterdam: Aldo van Eyck

Designed by van Eyck to house children between the ages of 0-18 years. The design intentions were to foster an environment for children in order to give them a sense of security and acceptance.

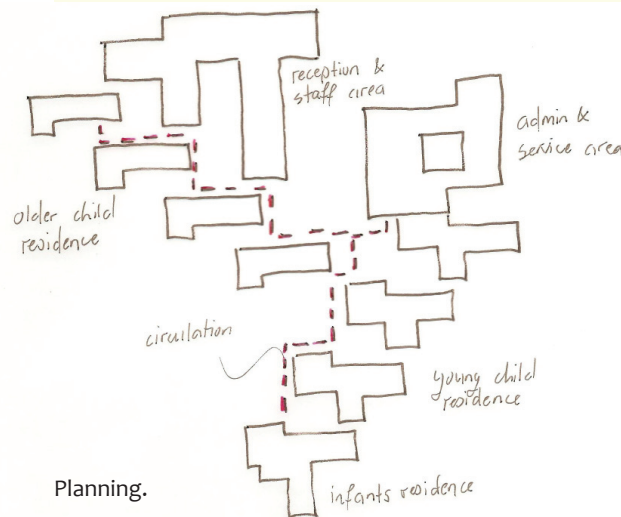
The large open site on the periphery of the city on which the orphanage is located allowed for a sprawling configuration whereby a little city within a city was achieved.

The plan of the orphanage is arranged according to the ages of the children within specific spaces. Each section has its own identity and the appropriate facilities are put in place according to the requirements of each group.

Within the plan is a playfulness of spaces as well as materials. Thresholds are emphasised and simple elements become useful. Scale plays a large role in the design. These spaces are designed for children and the appropriate scale is used to accommodate their size.



Orphanage Massing.  
After Ligtelijn 1999:95



Planning.  
After Ligtelijn 1999:91



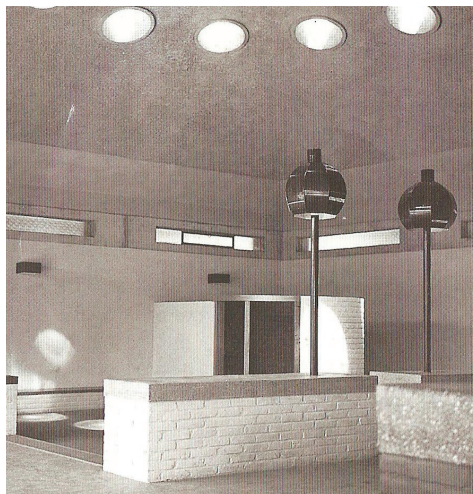
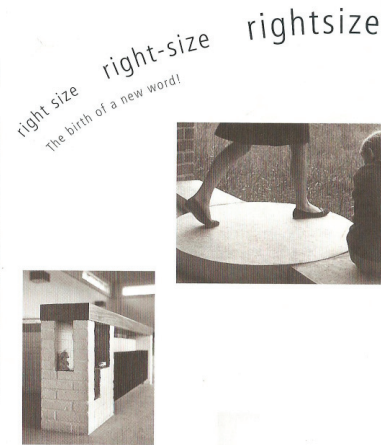
Emphasis on transition of spaces and bold use of colour.

Source Ligtelijn 1999:102



Appropriate scale and size.

Source Ligtelijn 1999:103



Honest use of materiality.

Source Ligtelijn 1999:90



## Lessons learnt

- Child space needs to be inviting yet secure
- Children need space to gather as community
- Connection of interior and exterior should be defined
- Planning should be playful yet rhythmic
- Circulation should be a journey of opportunities
- Space for children should be part of the city.



### Amsterdam Playgrounds: Aldo van Eyck

The Dijkstraat and Conraestraat Playgrounds designed in Amsterdam by Aldo van Eyck were part of a number of playgrounds built in the city following the end of the Second World War. They introduced a new approach to public space in urban design whereby public space was conceived of as a distributed network or polycentric net.

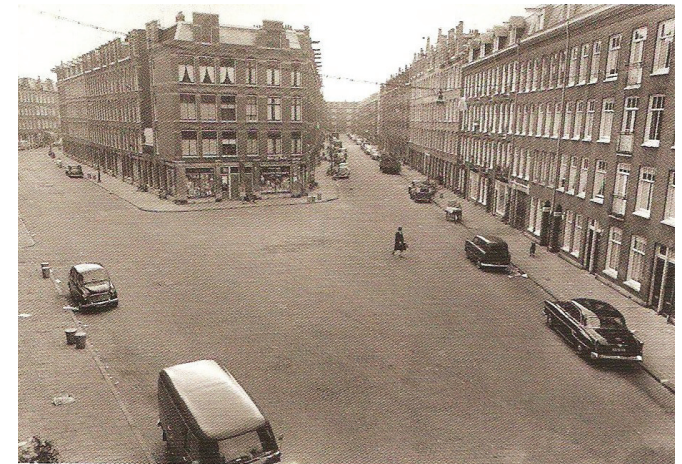
The playgrounds were remarkable in the attention to detail van Eyck paid to each design. These playgrounds were innovative from an urban design perspective in the senses that:

- They could be interstitially implanted in the in-between spaces left over from the traditional urban fabric of the city of Amsterdam. This implied that the playgrounds could be re-used in future should they have outlived their purpose

- The playgrounds were much smaller than the standard ones, but were many more of them and they made up a dense distributed network

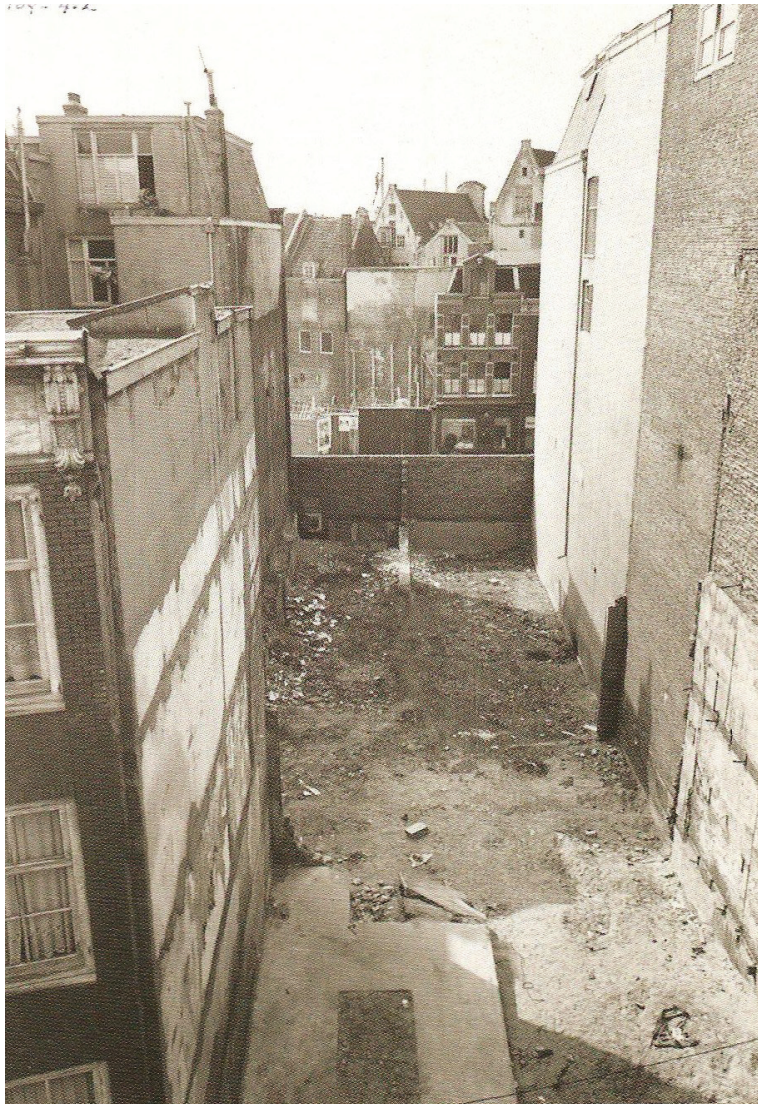
Relevance to thesis:

- A landscape oriented layout with many subtle possibilities for play is suggested.
- What is also highlighted is a play network that enhances the liveability of the neighbourhood and assigns identity to the public space.
- Adaptability to have a modern variant of the play network offering potential for play space for people of all ages.
- These spaces can easily be reappropriated should they outlive their purpose.

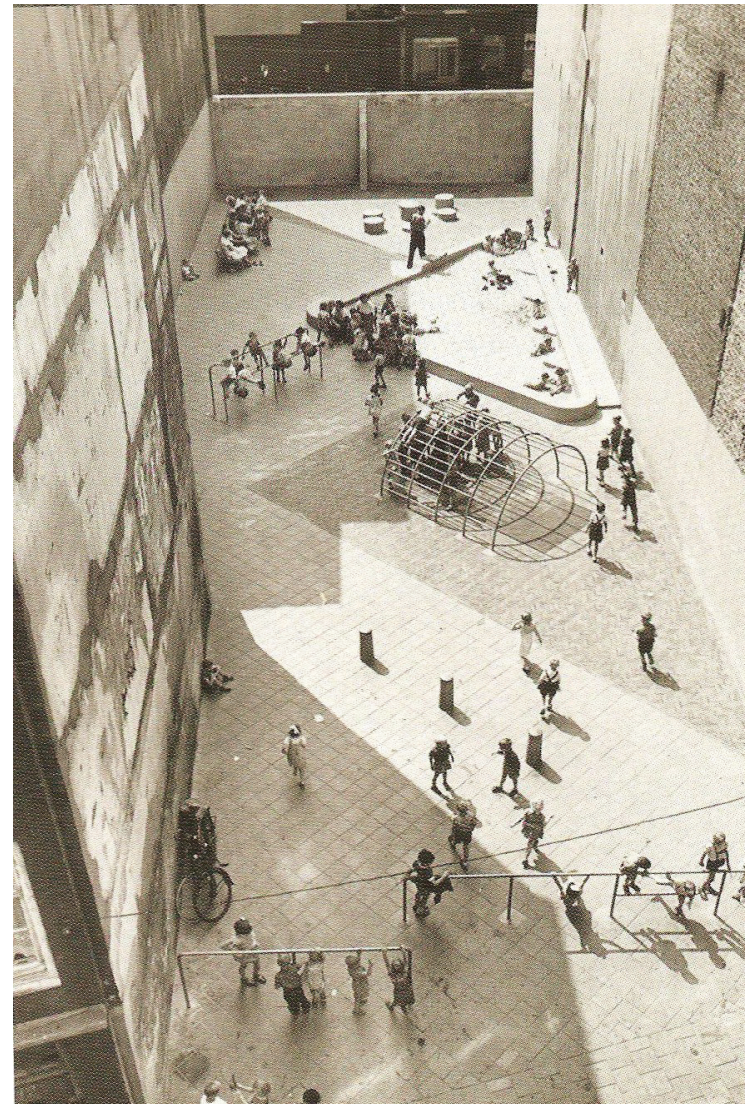


Before and After photographs for the Conraestraat playground (Source:Lefavre 2007:60)





Abandoned site before Dijkstraat playground (Source:Lefaivre 2007:61)

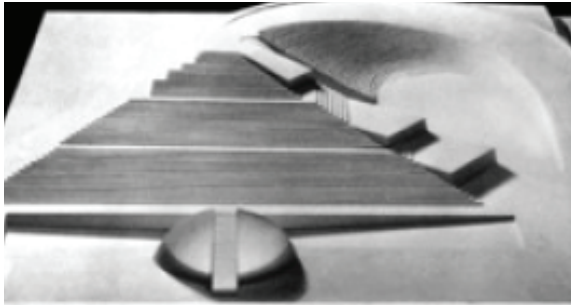


Dijkstraat playground (Source:Lefaivre 2007:61)



## Isamu Noguchi: Playground Designs

Isamu Noguchi (1904-1988) was a visionary sculptor and landscape garden designer whose innovative playgrounds and playground equipment designs are a fusion of earth sculpture and interactive play. The playgrounds and playground equipment designed by Noguchi were works of art that instead of being viewed from a distance were meant to be interactive.



models of Playground designs. top playmountain. bottom: unknown

(Source:www.landscapeonline.com)



model of slide mantra (Source:www.landscapeonline.com)

Slide Mantra, done from 1966 to 1988, the inherent beauty of his cylindrical slides went from art to functionality. Here, the playfulness of a slide has been turned back into art.



slide mantra

(Source:www.landscapeonline.com)

Isamu Noguchi, seen below with his model for the Contoured Playground designed in 1933, combined traditional house and garden experiences with his conception of sculpture as lived space



noguchi with model of contoured playground (Source:www.landscapeonline.com)

Relevance to thesis:

- The idea of considering a playscape as a sculptural landscape natural to children by combining art and play.
- Functional city ornaments such as street signs can be considered as play pieces which are works of art.

## Olympic Sculpture Park: Weiss/Manfredi [2007]

The sculpture park is located adjacent the Seattle Art Museum, on a waterfront property that was once an industrial site and is sliced into three parcels by train tracks and an arterial road making it a problematic area.

Planned as a continuous landscape that wanders from the city to the bay, this Z-shaped hybrid landform provides a new pedestrian infrastructure layered over the existing site (Krauel 2009:49), allowing free pedestrian movement between downtown Seattle and the newly created beach at the base of the site.

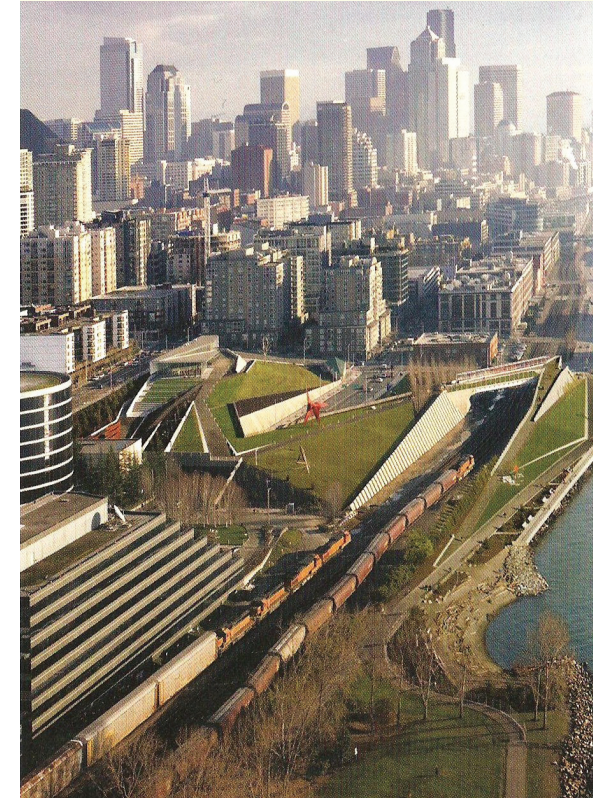
As a landscape for art, the Olympic sculpture park extends the experience of viewing modern and contemporary works beyond the museum walls.

Relevance to thesis:

It strongly illuminates the power of an invented landscape to create urban connections.

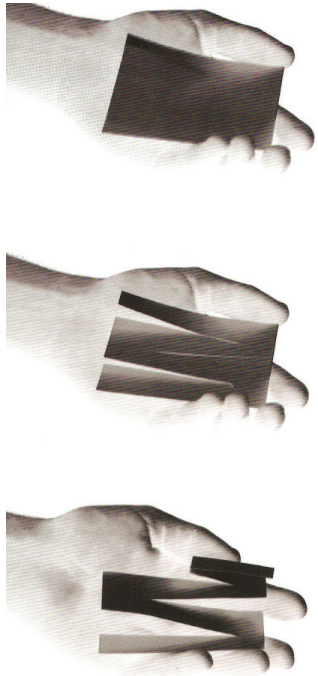


Industrial site before intervention (Source: Krauel 2009:49)



Industrial site after the intervention (Source: Krauel 2009:46)





conceptual model illustrating  
the folded landscape (Source:  
Krauel 2009:48)



Olympic Sculpture Park (Source: Krauel 2009:49)



05. Site

## Site Selection

The North east quadrant of the Inner City was chosen as the study area as it is closest to the CBD and houses an increasing migrant residential population. The area is densely built up and is a representation of the condition of the Inner city dweller. On offer is an array of various cultures and the area has long been considered a deprived environment since the advent of blight resulting in a quality of urban life that is poor

The chosen site therefore would have to be able to:

- Offer potential to create some outdoor activities
- Be easily accessible by public transport
- Be within close proximity to residential development and hence the users
- Allow for connection into the existing urban fabric

### Macro Urban Location



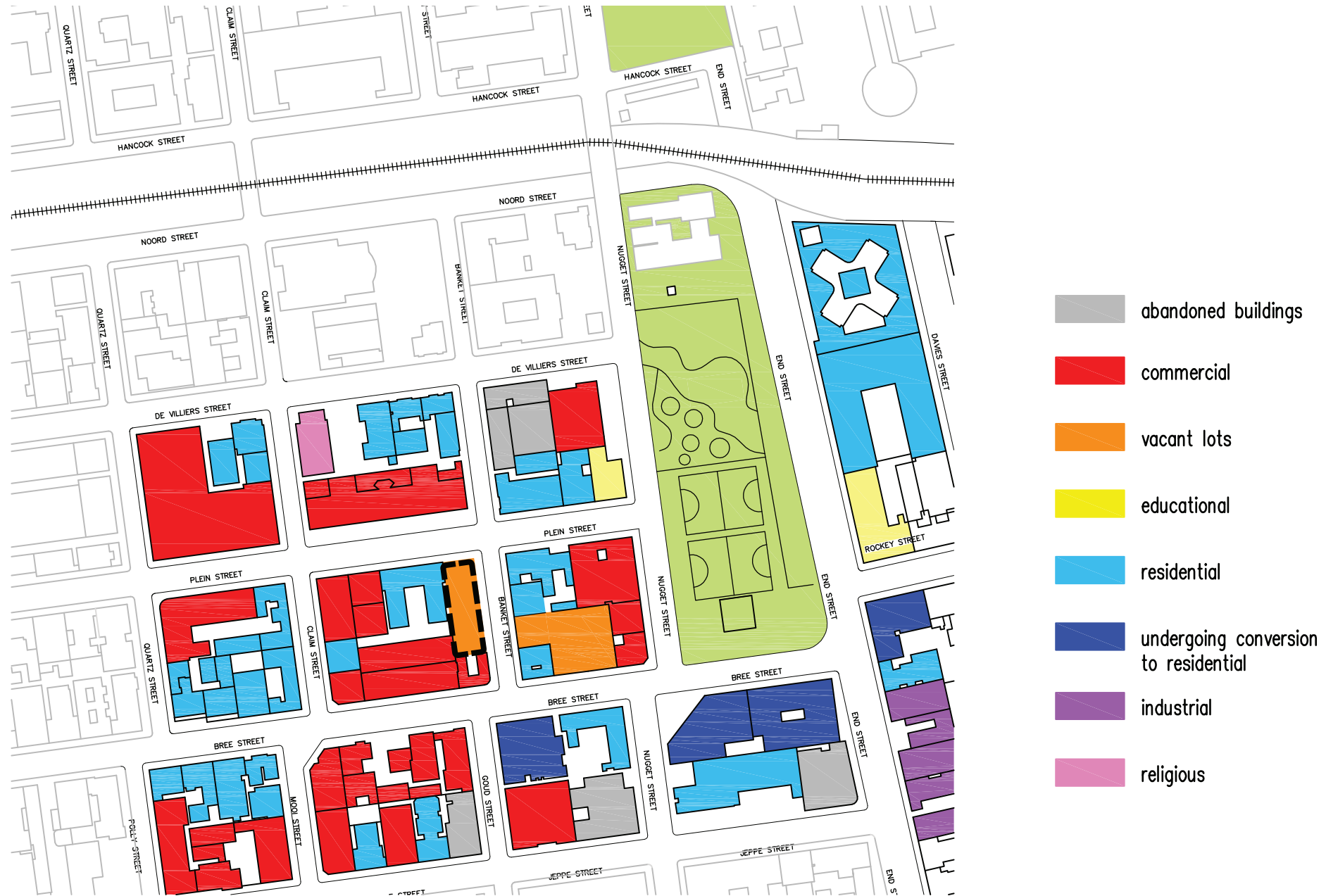
(Source: Google Earth)

## Study Area





## General Land Use



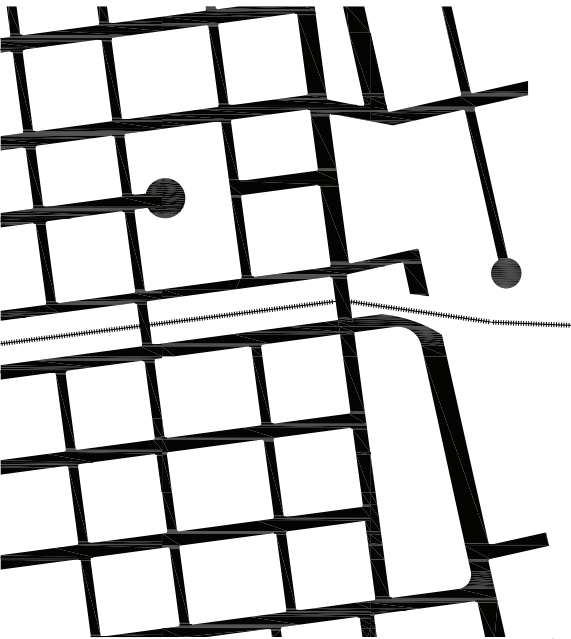
Public Transport Networks



legend

- major road
- rea vaya
- main pedestrain movement
- rail tracks
- taxi rank

Road Grid



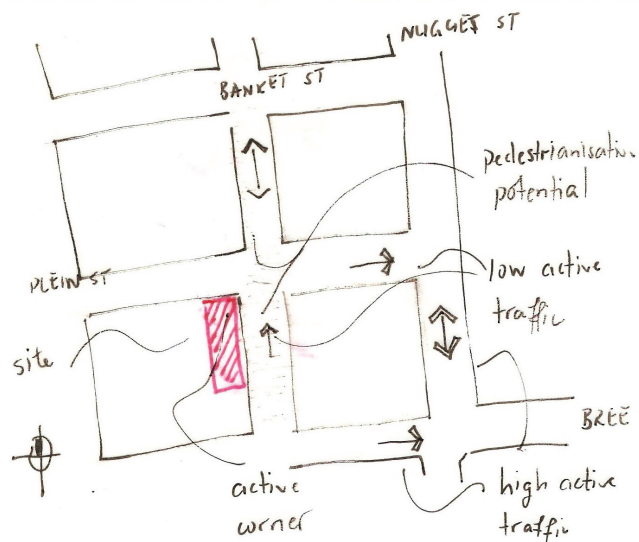
Educational Facilities



- preschool/creche
- primary school
- high school



The chosen site is at the corner of Plein Street and Banket Street and is one of the very few vacant lots present. It sits as part of an urban block that consists of a high rise office undergoing conversion to residential, medium rise commercial and residential. It is a tight size spatially with dimensions of 16m by 48m with a footprint of 768 square metres. As a corner site it affords an opportunity for accentuation of the programme.



Micro Urban Location (Source: Google Earth)

Being a vacant site, there is potential to create some outdoor activities. Bounded by adjacent buildings to the West and South, the street facing edges of Nugget and Plein Streets consist of relatively low active vehicular traffic volumes. It is feasible to pedestrianize Banket street to run parallel as a pedestrian thoroughfare to Hillbrow.

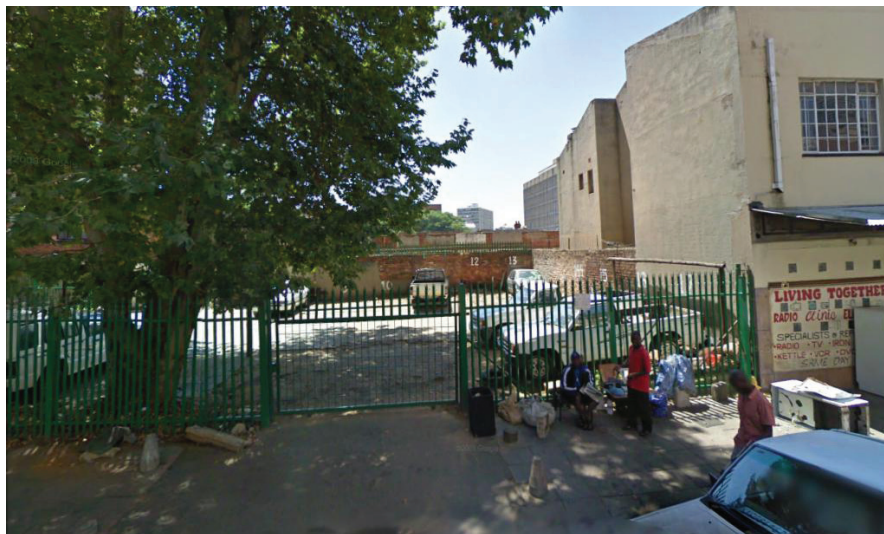


At present, there are currently on site a number of informal food stalls which are being proposed to be incorporated to the proposed pedestrianized section of Banket where the current taxis use the space as an informal street car wash using illegal water connections for this purpose.

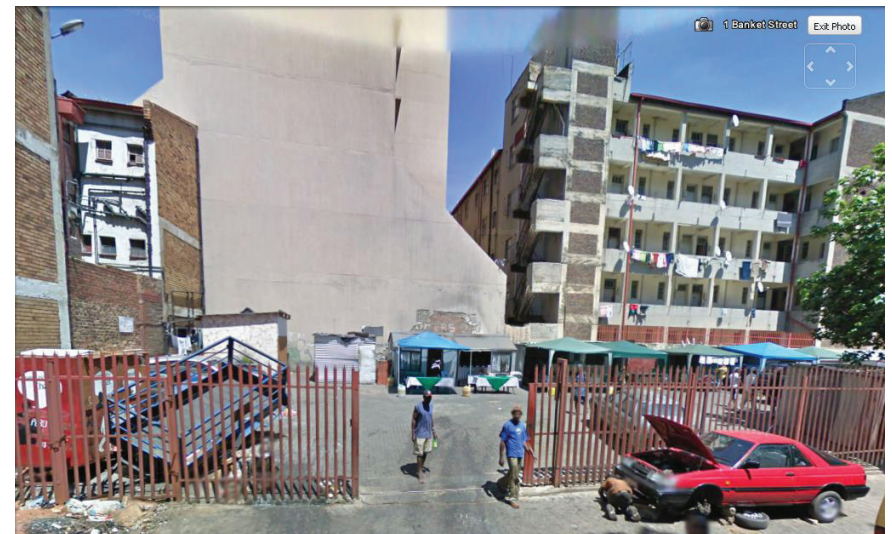
Greater mobility and flexibility of the vehicle allows for the taxis to be accommodated at their designated taxi rank, vis-a-vis MTN or Bree respectively .



View of site from Plein Street (Source: Google Earth)



View east from site (Source: Google Earth)



View of site from Banket Street (Source: Google Earth)





View of Banket Street (Source: Google Earth)



View along Plein Street looking east (Source: Google Earth)

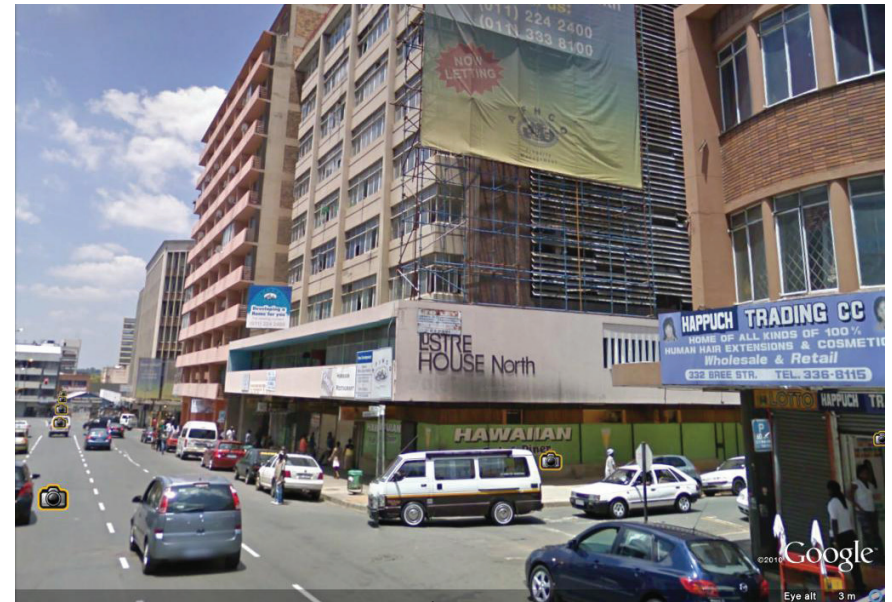
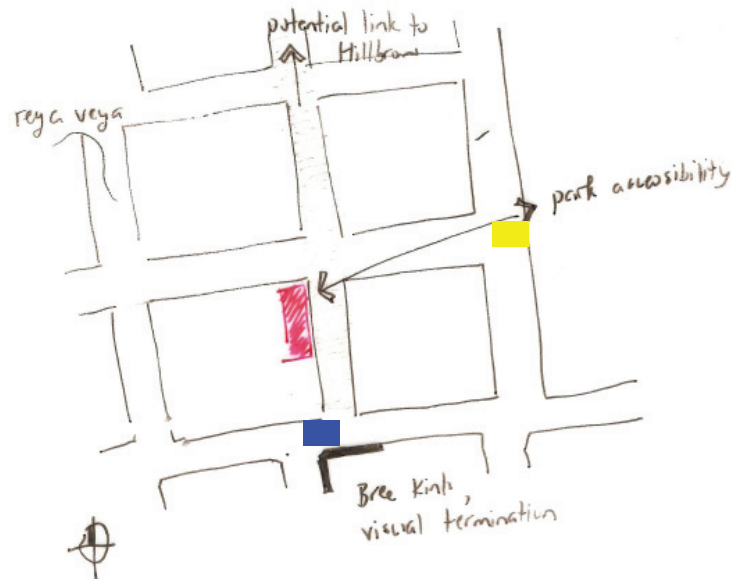


Plein Street looking west (Source: Google Earth)

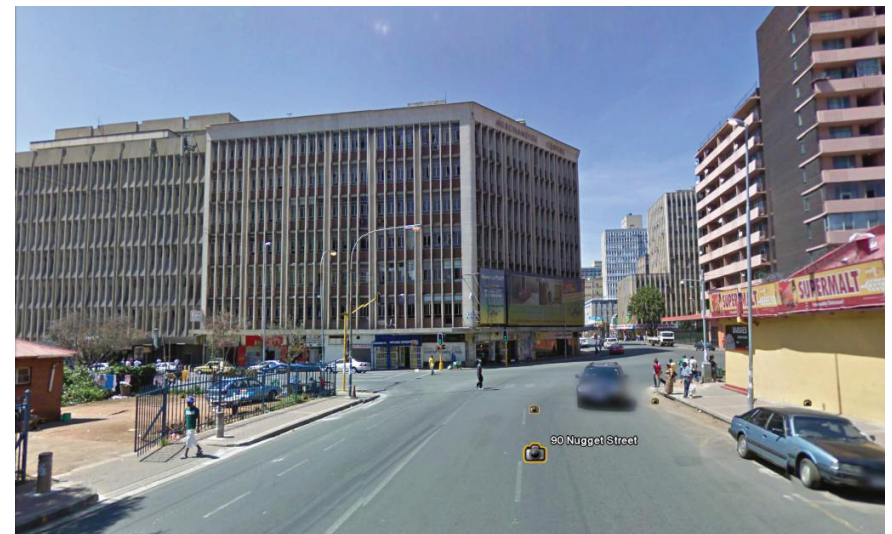


The surrounding context of conversion of office blocks to residential to residential apartments implies an increase in the residential population and concomitantly their children. This conveniently will allow for a seamless integration of the programme into the ever expanding inner city building fabric by creation of an appropriate landmark at an appropriate scale.

The proximity of public transport which is readily available with the Reya Veya bus rapid transport link and MTN Taxi rank being both within walking distance from the site.



View of Bree Street looking east (Source: Google Earth)



View of Nugget Street looking south (Source: Google Earth)



## 06. Programmatic Resolution

## Proposal

As a means of addressing the needs of early childhood development in the city, the thesis proposes the expropriation of under utilized spaces for the purposes of play in the inner city .

It is evident from the research that early childhood development is removed from the public realm, particularly formal spaces for educational play. This thesis proposes the creation of a centre for creative learning for children from the ages of 6 months till 6 years as a solution to bring the life and culture of child care into broader public view.

The solution of such a centre will be focused on the creation of better suited formal learning environments which will highlight the importance of play by associating it with learning thus allowing for children to begin to interact with the city through the creation of an additional layer that allows for play within the existing built fabric.



## Programme Resolution

The proposed centre for creative learning is being viewed as part of a mesh of landscapes and spaces that must constantly shift in making the city function as a continuously fluid organisation that can respond to the particularities of place and the social goal of enhancing early childhood development.

### Kindergarten

This kindergarten will provide for the structured educational play environments for the children from 0-6years. Rather than shut down the existing child care facilities, the centre should function as an exemplar on the creation of appropriate spaces.

Book learning will be considered as important for the kindergarten, as well as advocating active participation in the form of domestic training such as chores, handcrafts, drawings and practical science. Emphasis will be placed on the interior ambiance, form and circulation. Movable and multi-purpose furniture is ideal allowing for flexible spaces configuration. The kindergarten is envisaged as being a creative, fun environment and one that offers calm and reminiscence as an urban sanctuary.

### Crèche

The creche will provide accommodation for children from 0-2years and is intended to provide a stimulating environment for the human senses thereby effectively contributing to the motor, social and cognitive development of children at that age.

### Library

In light of the high levels of poverty in the inner city, provision of public educational resources directly addresses the diminishing role and quality of public space in our culture by associating the act of playing, learning with safety, comfort, inspiration, stimulation, accessibility and beauty. The picture book, toy library and study centre will primarily cater for kindergarten children. It is meant to introduce to the young children the notion of public space as well as act as a visual interface to the public, highlighting the importance of learning.

### Kitchen & dining/gallery/interaction

This space is conceived to provide supplementary nutrition for children of the kindergarten and creche, ideally having visual and expanded practical links to the community. This space could be a shared space that focuses on nutritional education in the community maximising school amenities. Education should be viewed as a normal and natural social and cultural phenomenon that is independent of class and social status.

## Design Parameters

The objective of the centre for creative learning is to guide the development of children to be able to enter into formal education at age 6. Division is done according to age groups where the numbers of children per age group is limited to:

[6 months- 1 year] 16 per group, [1-2 years] 20 per group.

[2-3 years] 20 per group, [3-4 years] 25 per group,

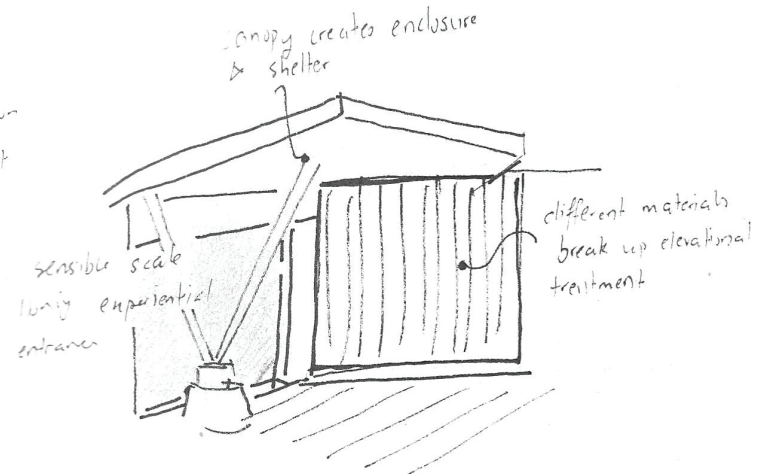
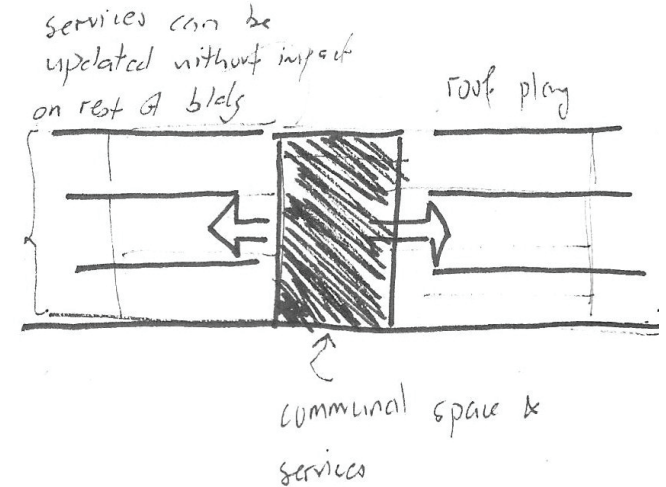
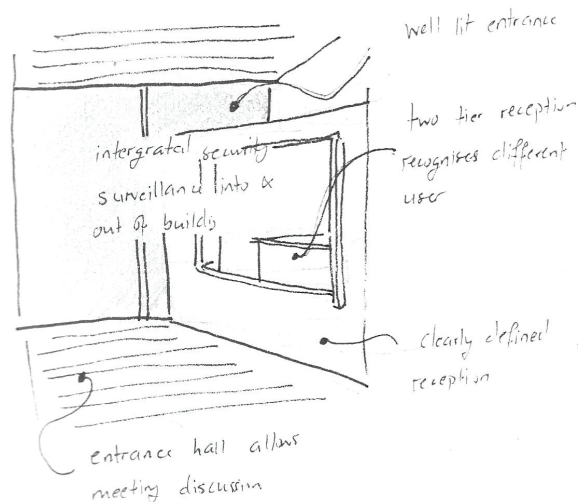
[4-5 years] 30 per group, [5-6 years] 30 per group.

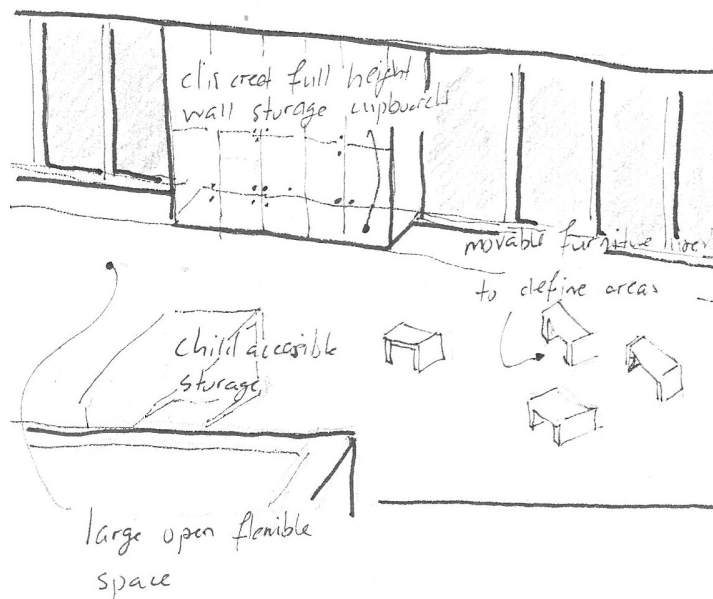
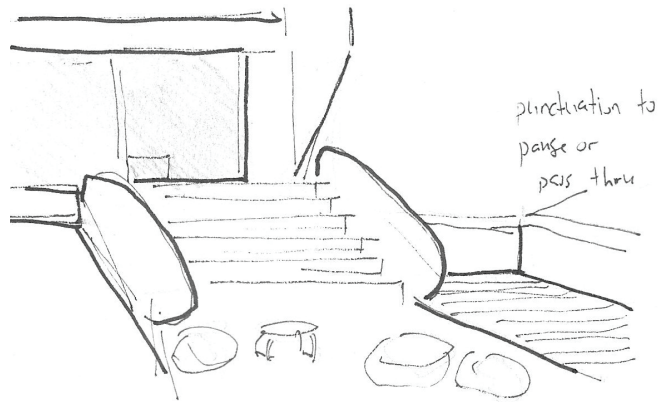
These sizes allow for one teacher [ with the aid of a helper for children under 2 years] to sufficiently have an intimate relationship with the children and allow routine activities to be undertaken with greater flexibility.

Formal daily routines begin at age 2 years. Dedicated playrooms for each group up till 4 years where formal classrooms will be used will allow active work to be incorporated. Vertical arrangement of this will have to be undertaken as a result of the tight site dimensions.

### Creating an inspiring building

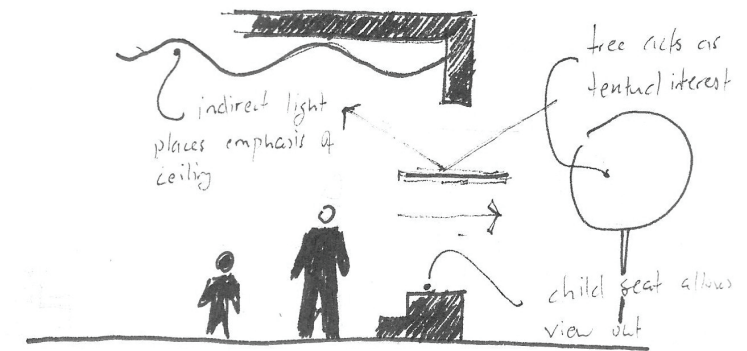
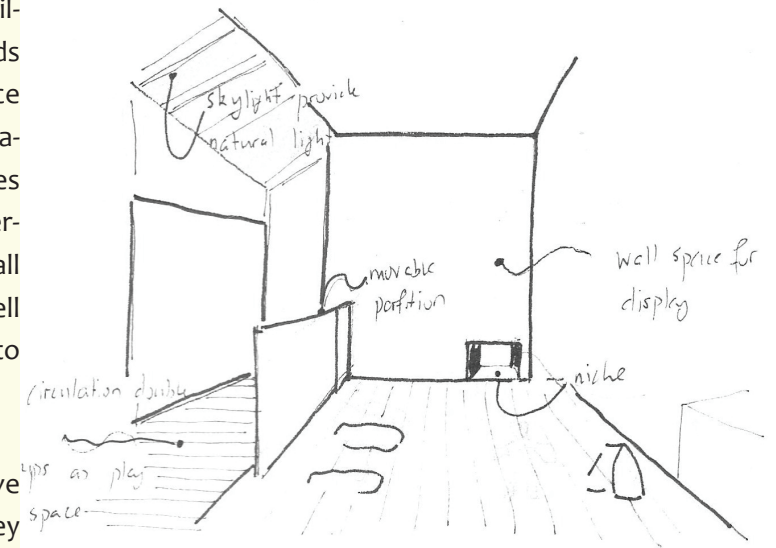
- **Planning and accessibility.** Children's centres are small buildings. As much floor area should be usable. Planning the main spaces so that they are accessible and part of the movement through the building can help reduce circulation. It will also mean the building has a simple logical layout that can be navigated with minimal use of signs.
- **Entrances.** Entrance should be inviting and create a sense of arrival. A delicate balance needs to be struck between providing security for building and allowing for ease of access.





- **Delivering a learning experience.** For children to connect with a play space, it needs to be rich and varied in character: a place that encourages independence, exploration and creativity. Successful play spaces are flexible and offer possibility for different activities but contain special areas, small places full of character and interest. Well thought out storage will allow activities to run effectively.

- **Active learning.** Young children are active learners and like to move around when they play. Coherent design of traditionally formal spaces such as a picture book library would engage children's modes of learning and perception of architecture. Allowing visual access to normally adult areas and semi interaction to areas such as the kitchen can demystify processes such as food preparation. Toilets can be located next to play space so that they are easy for children to reach and encourage independence. Outdoor play is essential to the growth of a child's imagination and self confidence, and for preventing and reducing obesity by encouraging physical activity. It should be a safe stimulating environment where children can play without supervision.





## Schedule of Areas

kindergarten	409	
space	area[m <sup>2</sup> ]	quantity
playroom[3-4yr old]	60	1
classroom[4-5yr old]	40	1
classroom[5-6yr old]	40	1
group room	30	2
sleeping area	30	1
head teacher	12	1
staff area	15	1
meeting room	18	1
store	9	3
informal auditorium [ 80 person capacity]	140	1
wet area/painting	20	1
ablutions	12	2

creche	283	
space	area[m <sup>2</sup> ]	quantity
cot room[0-1yr old]	20	1
playroom[1-2yr old]	40	1
playroom[2-3yr old]	40	1
group area	60	1
quiet area	20	2
feeding space	10	2
sick room	9	1
staff area	12	1
store room	6	2
ablutions	10	3

toy library & afterschool centre	220	
space	area[m <sup>2</sup> ]	quantity
playroom/group room	45	1
story telling	45	1
reading area	45	1
computer area	30	1
toy store	10	1
general store	12	2
librarian	9	1
ablutions	12	1

ktichen/dining	227	
space	area[m <sup>2</sup> ]	quantity
food prep	12	1
wash up	15	1
dry store	12	1
cold store	9	1
general store	9	1
dining area [80 children capacity]	150	1
teaching kitchen	20	1
ablutions	20	1

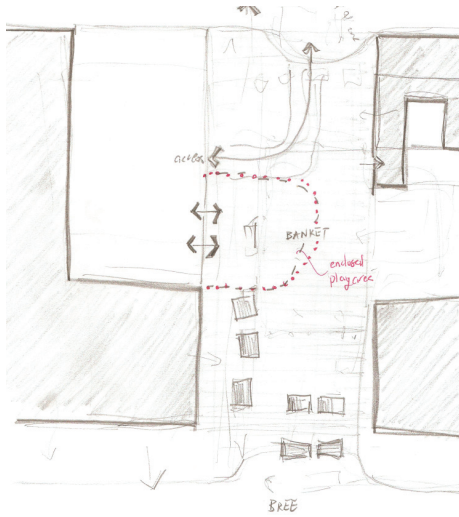
TOTAL

1139

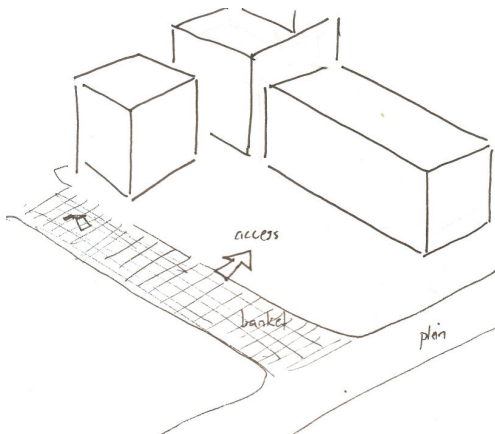


## 07. Design Development

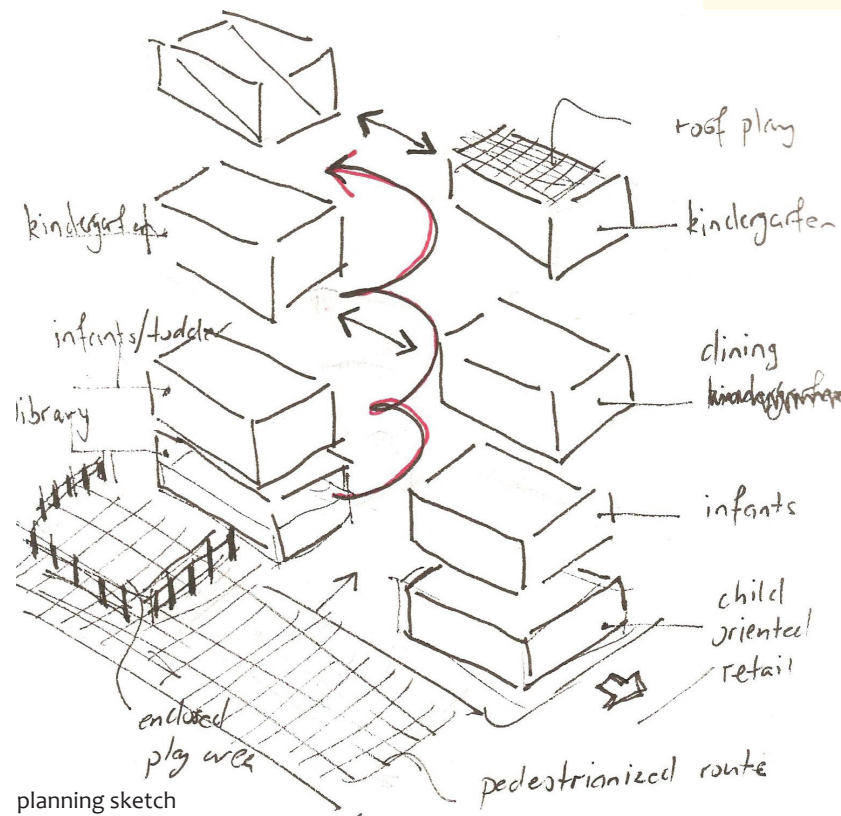
## Initial design



Banket street is relatively narrow and not a thoroughfare. Pedestrianizing the section between Bree and Plein allows the creation of a new square which faces onto the building. Access into the building would be from this new square

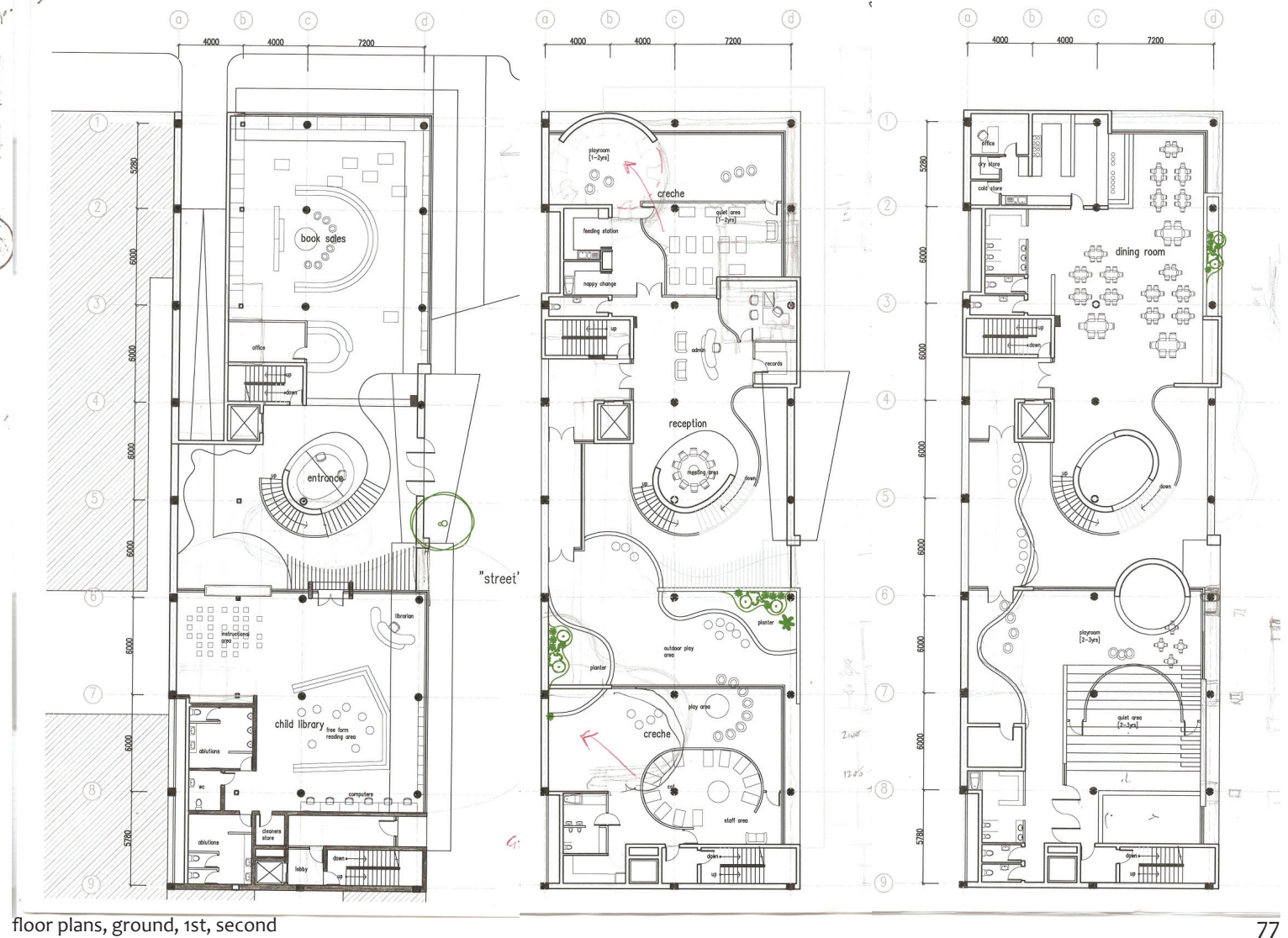
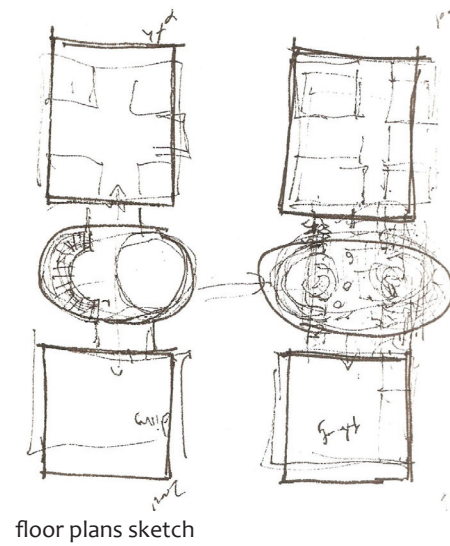


Access into the building would be central from the public square. Individual play units for each age group would be layered from first floor as self contained spaces from a central volume running the entire length of the building. Terminating in a roof top playground. At ground floor, the library was placed with access to enclosed an play area and child oriented retail to take advantage of pedestrian movement along Plein street. Individual units for each age group would operate as autonomous spaces each with their own ablutions located along the west edge.



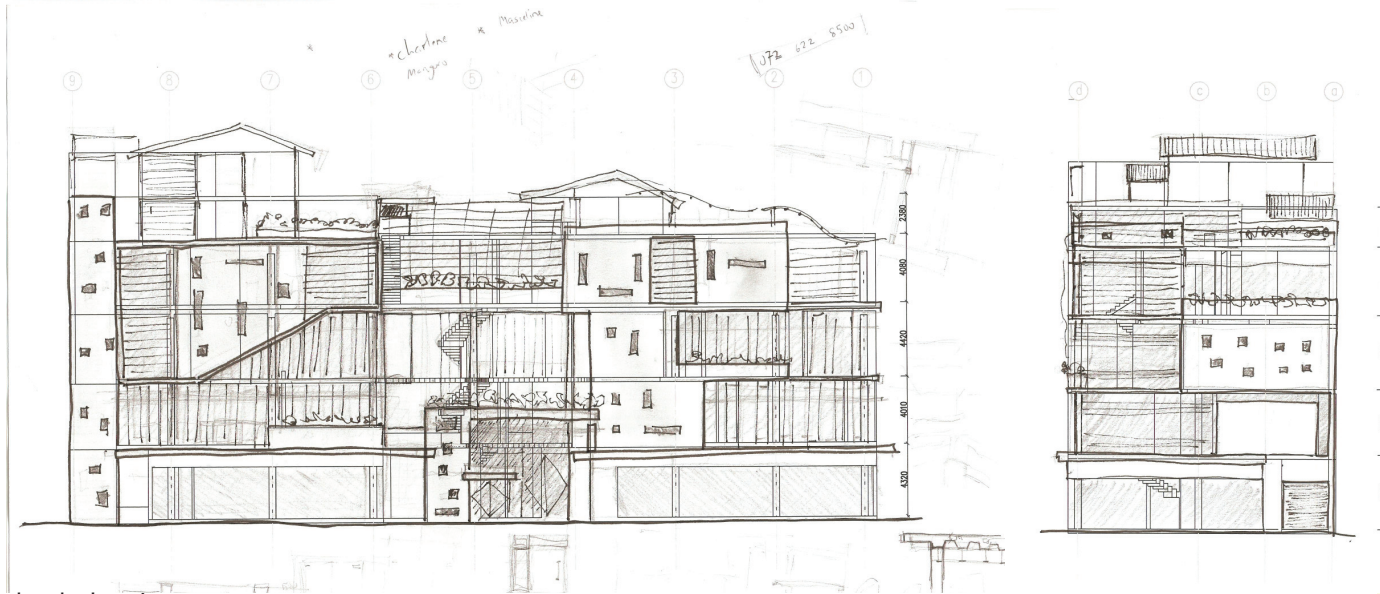


the quality of space of the internal circulation of the creche and kindergarten using the means of an internal staircase and lift only as a vertical circulation was not allowing the creation of spontaneous encounters for play as well as create 'accidental secret spaces'





The initial architectural language was inspired as a fragmented play assemblage of masses with fenestration placement being determined by the public private relationship of internal activities. Criticism of the language was that it bordered on the side of too formalistic an interpretation of play



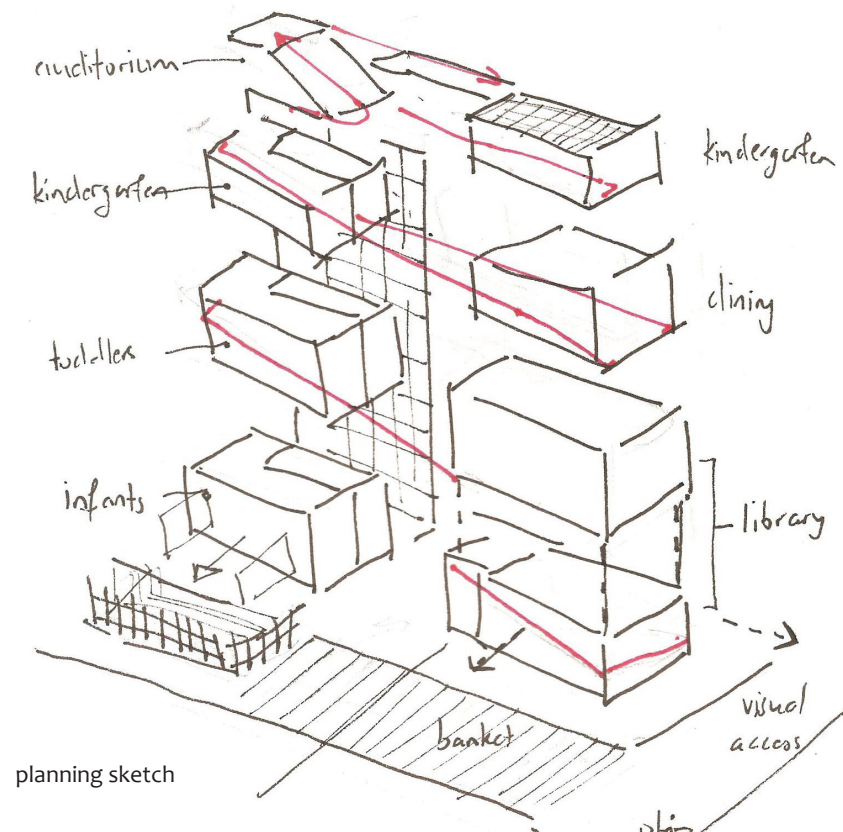
sketch elevations



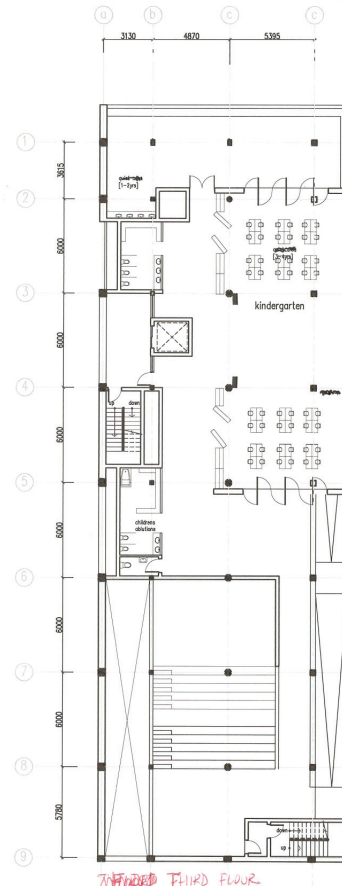
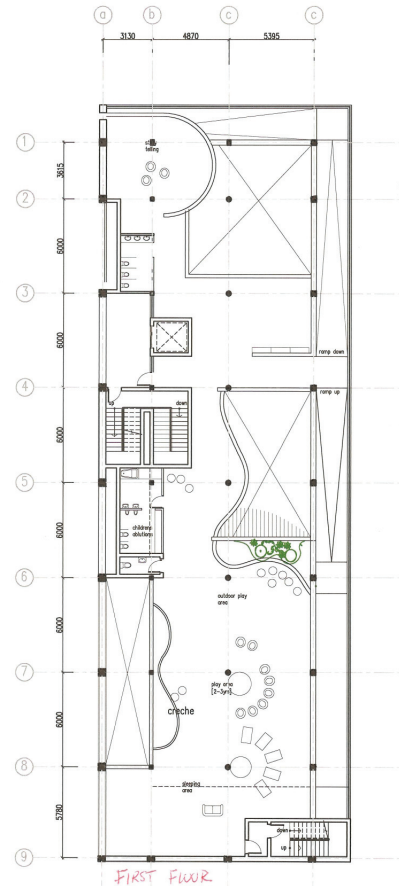
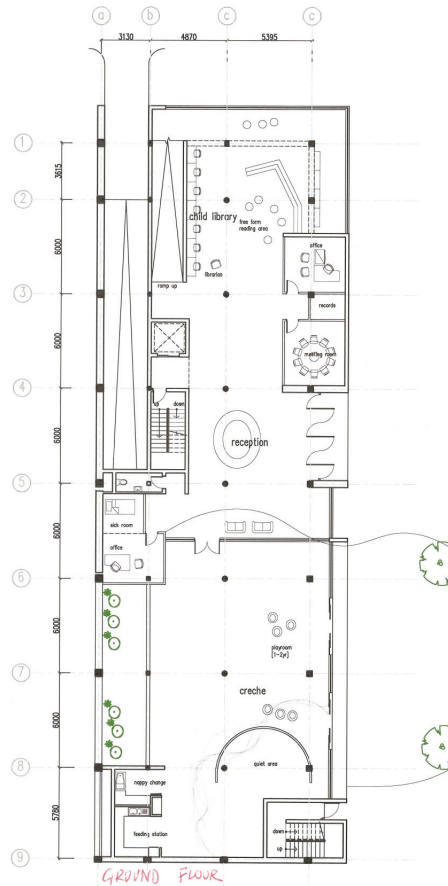
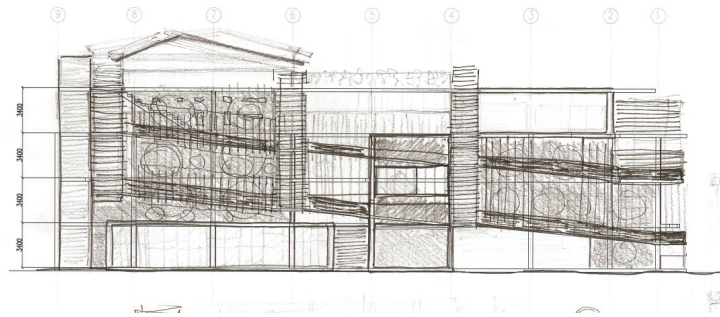
## Alternative Design

An alternative approach to see what ideas could be incorporated into the initial design was to have the communal spaces of the library and dining facing north onto Plein Street and a ramp running the entire east facade connecting each respective common space to a play area. Infants space shifted to ground floor with an enclosed play area. The internal spaces would operate as fluid space where movement is encouraged through the whole building.

The ramp becomes a lively element where circulation is celebrated and allows visual inter-activity with interior while being a shared space which can be used to articulate the exterior. The informal auditorium sweeps this circulation surface onto the roof top play space. The introduction of the ramp added an element of dynamism and playfulness to the design. However as an architectural element externally, it posed the problem of lighting interior spaces and would be even more formal an architectural language than the initial design







The final design picked up the idea of a ramp, incorporating it in the creche and kindergarten sections as circulation and play space. The integration of circulation space to formal gathering space blurred the division between play separate playrooms and classrooms and passages, implying the whole building acts as the playarea.

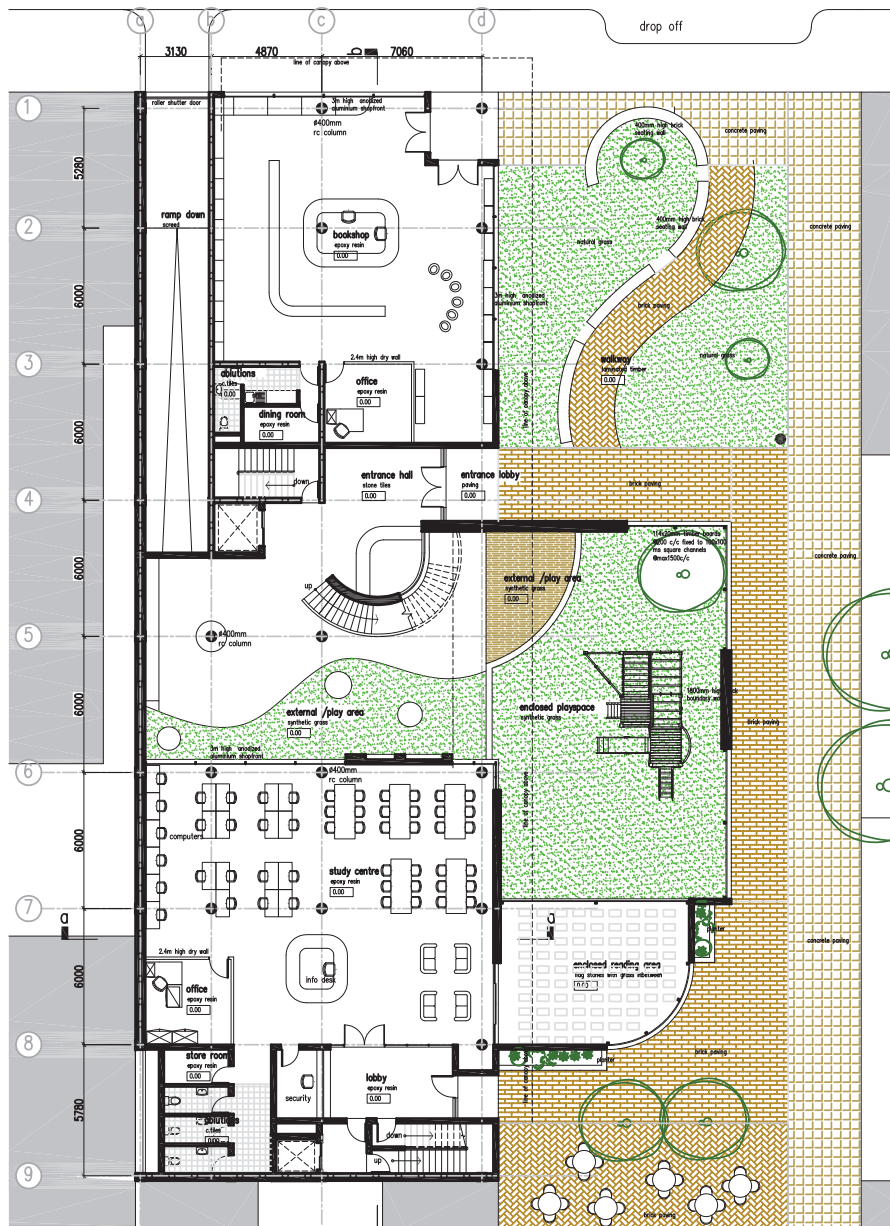
This was further reinforced by the architectural language which deliberately moved towards the direction of dynamic and vibrant assemblage of spaces of variety which collectively become the inspired space for the purpose of playful learning, the architectural kaleidoscope!

Final Design

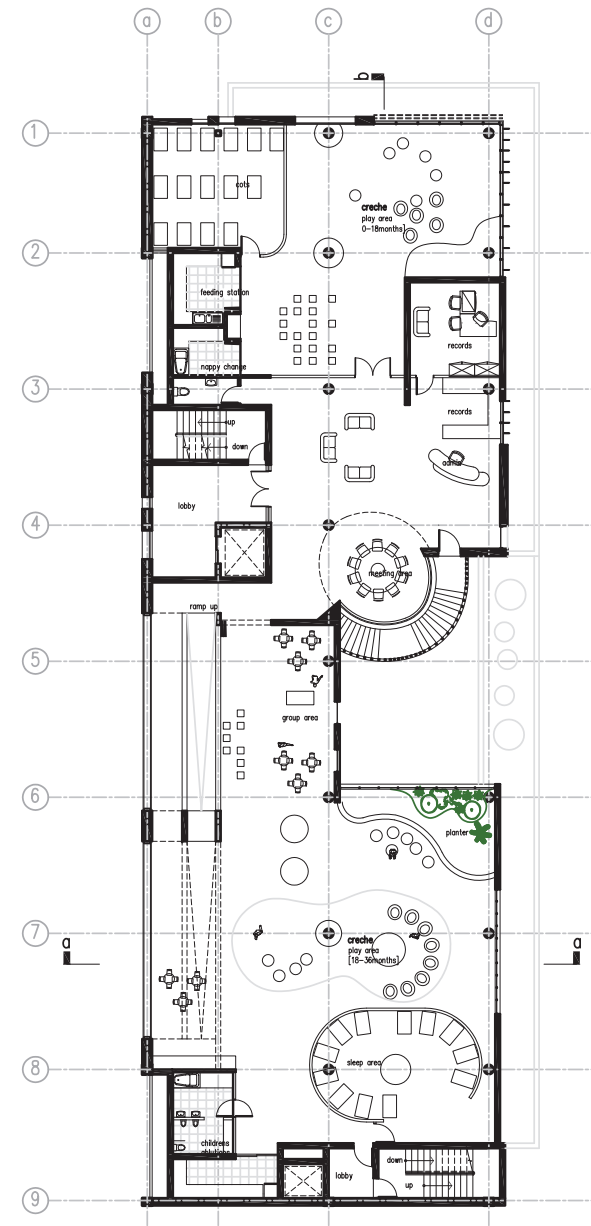
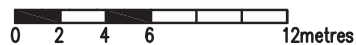


site plan

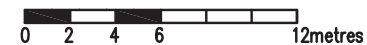
0 5 10 20 40metres



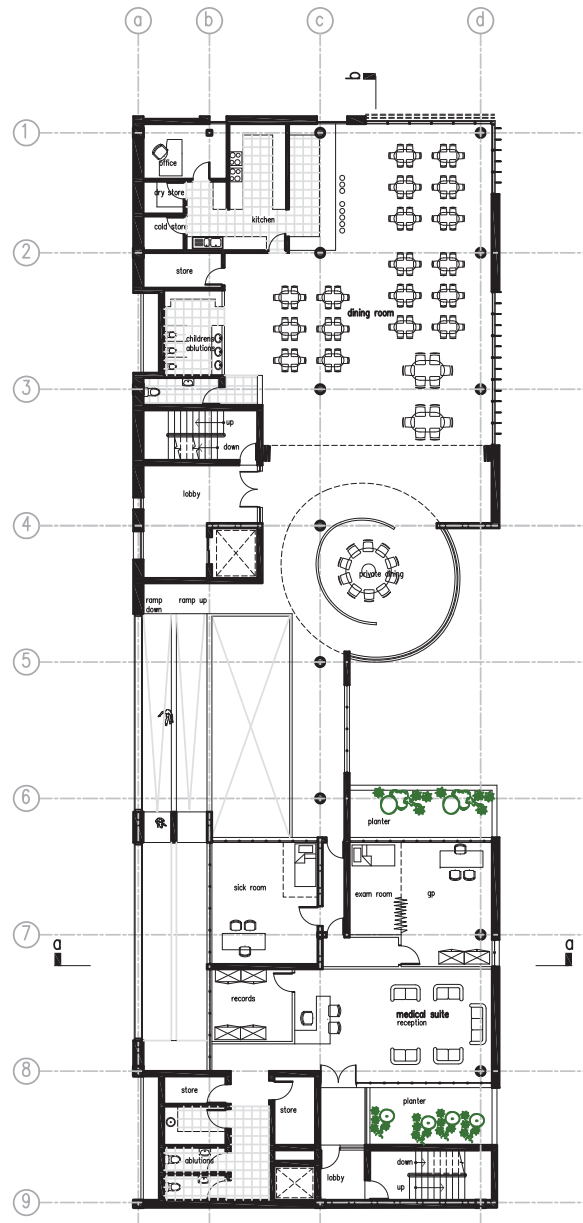
ground floor plan



1st floor plan

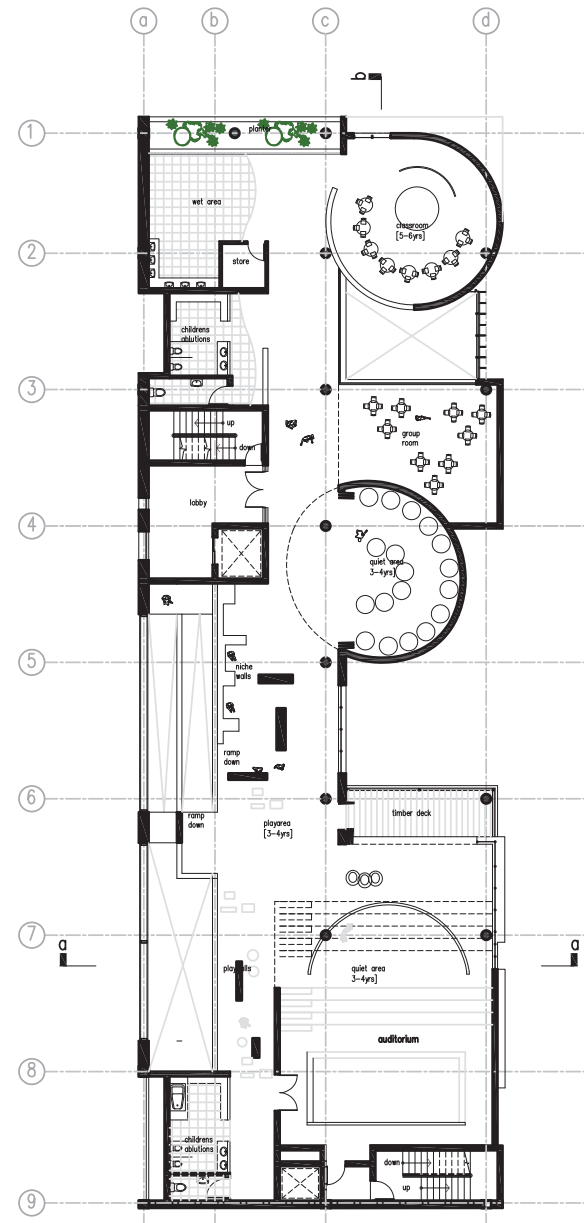






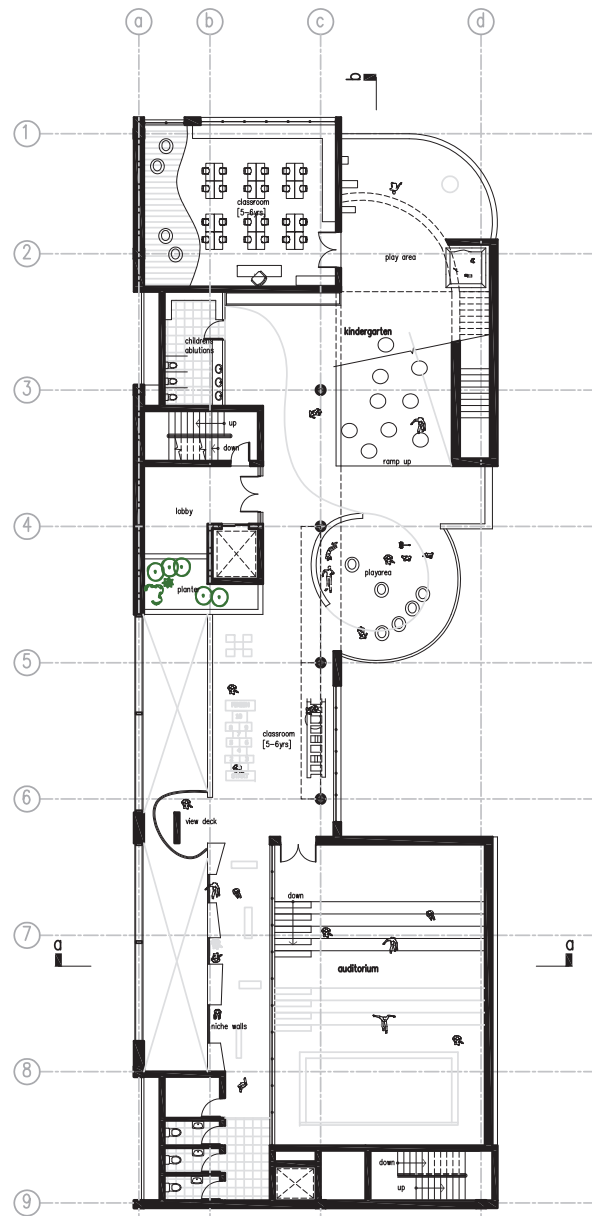
2nd floor plan

0 2 4 6 12metres



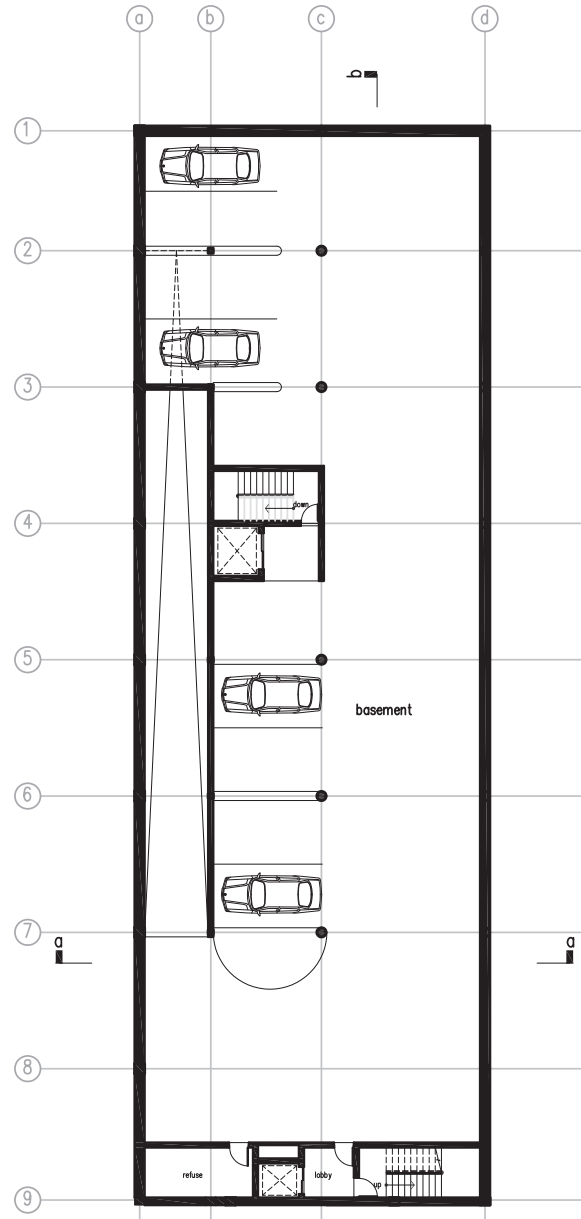
3rd floor plan

0 2 4 6 12metres



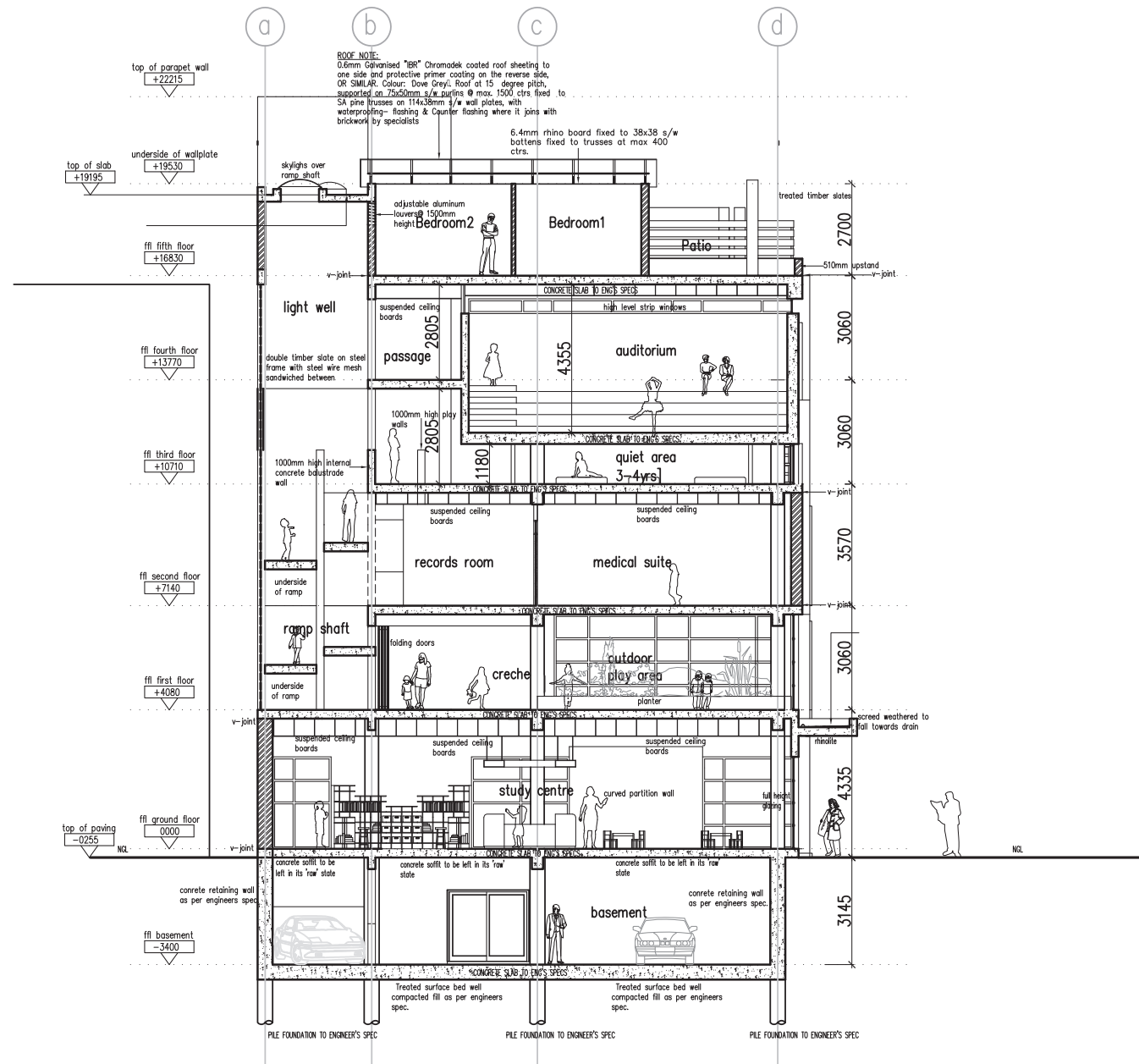
4th floor plan

0 2 4 6 12metres

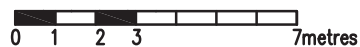


basement floor plan

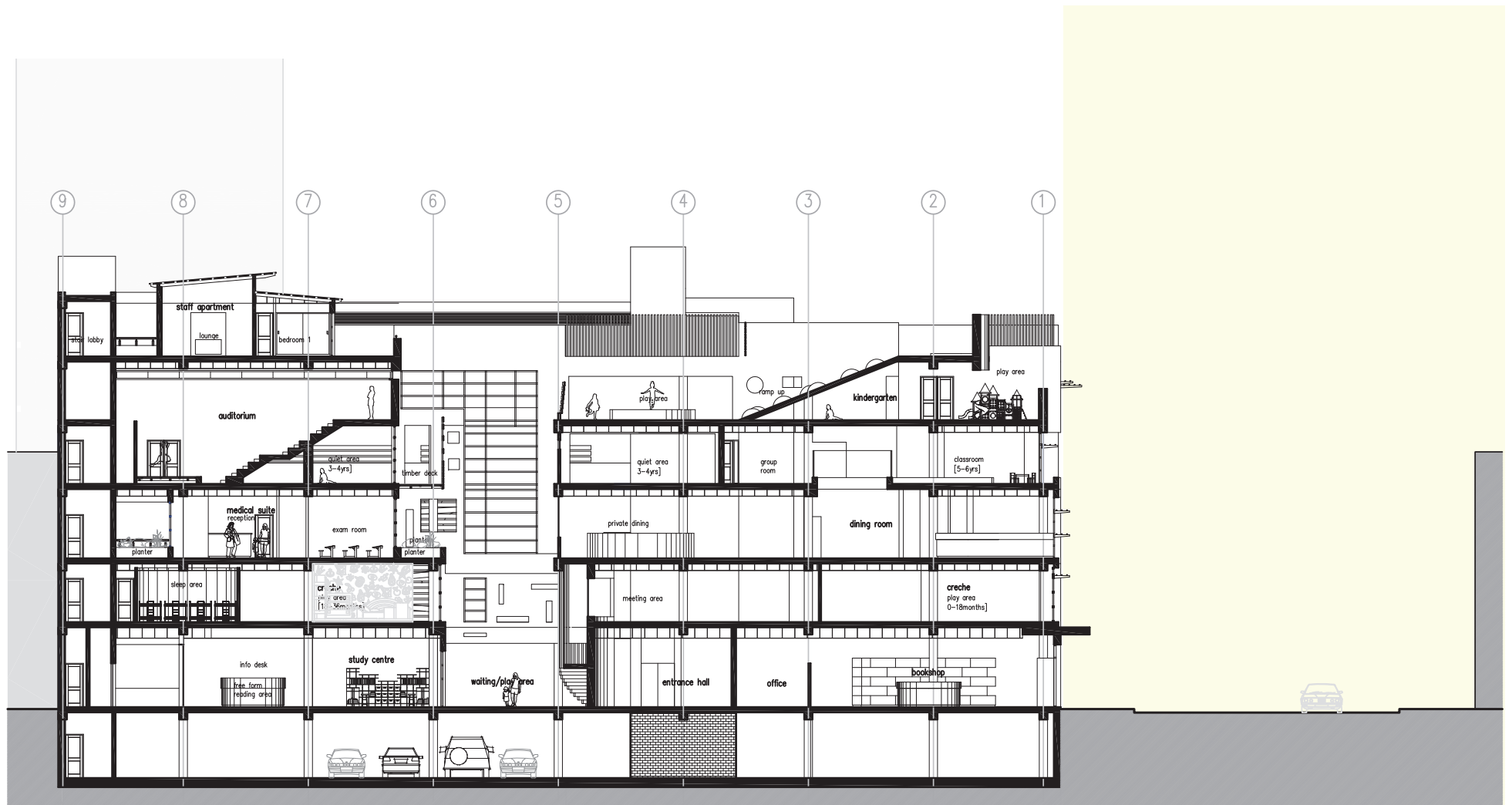
0 2 4 6 12metres



section a-a







section b-b

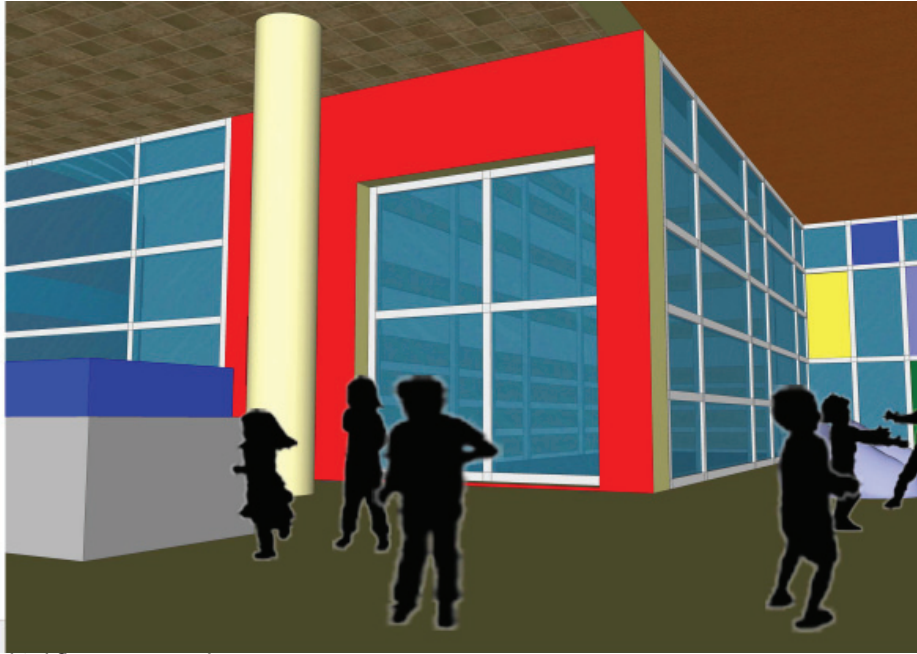




east elevation



north elevation



Third floor 3-4 year play area



Fourth floor ramp to roof





banket street view



plein street view



## o8. References



## Books

- ALEXANDER, C. (1977). **A Pattern Language**. New York. Oxford University Press
- BANDURA, A & WALTERS R.H (1969). **Social Learning and Personality Development**. New York. Holt, Rinehart & Winston.
- BEAVON, K.B. (2004). **Johannesburg: The Making and Shaping of the City**. Pretoria: Unisa.
- BIEHLER. (1976). **Child Development: An introduction**. Boston: Houghton Mifflin.
- BRODIE, N. (2008). **The Joburg Book**. Northlands: Pan Macmillan.
- CHIPKIN, C.M. (1993). **Johannesburg Style: Architecture & Society 1880-1960`s**. Cape Town: David Philip
- CURTIS,W.J.R. (1996). **Modern Architecture Since 1900**. London: Phaidon
- DATTNER, R (1969). **Design for play**. New York. Van Norstrand Reinhold.
- DAVIN, R. J.(2005). **The reception year : learning through play**. Sandton : Heinemann,
- DEWEY, J (1916). **Democracy and Education**. New York:MacMillian
- DUDEK, M. (2005). **Children's Spaces**. Oxford: Architectural Press.
- DUDEK, M. (2005). **Kindergarten Architecture**. London: Spon Press.
- FARMER, J. (1999). **Green Shift: Changing attitudes in Architecture to the Natural World**. Oxford. Architectural Press.
- GLEESON,B & SIPE,B (2006). **Creating Child Friendly Cities: Reinstating Kids in the City**. London: Routledge.
- HERTZBERGER, H. (1991). **Lessons for students in Architecture**.Rotterdam: Uitgeverij 010 Publishers.
- KRAUEL, J. (2009). **Urban Spaces: Environments for the future**. Barcelona: Links.
- LAWSON, B. (2001). **The Language of Space**. Oxford: Architectural Press.
- LEACH, N. Eds (2002). **The Hieroglyphics of Space: Reading and Experiencing the modern Metropolis**. London: Routledge.
- LEFAIVRE, L(2007). **Ground up city: Play as a design tool**. Rotterdam: 010 Publishers
- LIGTELIJN, V(1999). **Aldo van Eyck Works**.Basel: Birkhauser.
- LYNCH, K. Eds (1977). **Growing Up in Cities**. Cambridge, Massachusetts: MIT Press.
- LYNCH, K. (1960). **The Image of the City**. Cambridge, Massachusetts: MIT Press.
- PIAGET, I (1952). **The Origins of Intelligence**. New York: International Universities Press.
- SEEFELDT, C. (1993). **Early Childhood Education: An Introduction**. New York. MacMillan College Publishing Company.
- SKINNER, B.F (1974). **About Behaviourism**. Princeton New Jersey: Alfred A. Knopf.
- VAN DER WALL. (1987). **From Mining Camp to Metropolis**. Melville: van Rensburg.

## Reports/Articles

COJ (City of Johannesburg) (2007). **Inner City Regeneration Charter**. Johannesburg: COJ

COJ (City of Johannesburg) (2007). **Community Development Charter**. Johannesburg: COJ

Davey, Peter. 2003. **Lab Experiments**. The Architectural Review, No 1275: 56-62

FCBS (Fielden Clegg Bradley Studios) 2008. **Places for Learning**. (Internet).

Available at <http://www.fcbstudios.com/books>. (Accessed 15 January 2010)

Ministry of Education (2001). **Education White Paper 5 On Early Childhood Education**. Pretoria

Macguire, L (unknown), **Isamu Noguchi's Playground Designs**. (Internet)

Available online at <http://www.landscapeonline.com/research/article/7115> (Accessed 20 June 2010)

PABALE, M (2009). **City cares for youngest residents**. (Internet)

Available online at [http://www.joburg.org.za/index2.php?option=com\\_content&task=view&id=3749&po](http://www.joburg.org.za/index2.php?option=com_content&task=view&id=3749&po) (Accessed 15 February 2010)

Statistics South Africa (2001), **CENSUS 2001 Key results**. (Internet)

<http://www.statssa.gov.za/publications/CensusKey/CensusKey2001.pdf> (Accessed 3 May 2010)

VAN RIJSWIJCK (2007), **Early intervention gives kids the edge**. (Internet)

Available online at [http://joburgnews.co.za/2007/mar/mar6\\_valdemarne.stm](http://joburgnews.co.za/2007/mar/mar6_valdemarne.stm) (Accessed 02 February 2010)

VISSER, E. (2008). **City kids now have own school**. (Internet)

Available online at [http://www.joburg.org.za/index2.php?option=com\\_content&task=view&id=2262&po](http://www.joburg.org.za/index2.php?option=com_content&task=view&id=2262&po) (Accessed 15 February 2010)

United Nations Population Division. **World Urbanization Prospects. The 1999 Revision**. 2000. New York: United Nations.

Available online at <http://www.un.org/esa/population/publications/wup1999/wup99.htm>. (Accessed 18 March 2010)